WATERSMART: TITLE XVI WIIN ACT WATER RECLAMATION AND REUSE PROJECTS

GROUNDWATER RELIABILITY IMPROVEMENT PROGRAM (GRIP) RECYCLED WATER PROJECT

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WRD
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

Table of Contents

Appendices

Acronyms and Abbreviations

AFY	acre-feet per year
AWT	advanced water treatment
AWTF	advanced water treatment facility
Bureau	Bureau of Reclamation
CBWCB	Central Basin and West Coast Basin
CEQA	California Environmental Quality Act
CWAP	California Water Action Plan
EIR	Environmental Impact Report
GRIP	Groundwater Reliability Improvement Program Recycled Water Project
LACSD	Los Angeles County Sanitation District
LEED	Leadership in Energy & Environmental Design
MFSG	Montebello Forebay Spreading Grounds
MG	million gallons
MWD	Metropolitan Water District of Southern California
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
O&M	operations and maintenance
RWQCB	Regional Water Quality Control Board
SJCWRP	San Jose Creek Water Reclamation Plant
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USFWS	United States Fish and Wildlife Service
WDR	Wastewater Discharge Requirements
WRD	Water Replenishment District of Southern California
WRR	Water Reuse Requirements

1. Technical Proposal and Evaluation Criteria

1.1.Executive Summary

Date
March 11, 2022

Applicant Name and Location
Water Replenishment District of Southern California (WRD)
City of Lakewood, Los Angeles County, California

Summary
The Water Replenishment District of Southern California is requesting funds for the Groundwater Reliability Improvement Program (GRIP) Recycled Water Project, a cornerstone in WRD's efforts for water independence. This project created an Advanced Water Treatment Facility (AWTF or the facility) which achieved substantial construction completion on December 31, 2018 and commissioned in 2019. The facility produces highly purified recycled water to replenish the Central Groundwater Basin, allowing WRD to eliminate the use of imported water for replenishment.

Located in the City of Pico Rivera, California, the AWTF includes a flow equalization and pumping facility, a process building, three injection wells, three groundwater monitoring wells, a small amount of piping, an Administration and Learning Center building, renewable energy facilities, and a park-like landscape. The project also includes two connections to the existing San Jose Creek Water Reclamation Plant outfall pipeline to provide source water to the AWTF and convey treated water to the Montebello Forebay Spreading Grounds for groundwater replenishment.

Annually, the AWTF purifies approximately 10,000 acre-feet (3.25 billion gallons) of tertiary treated (recycled) water to near-distilled levels through an advanced water treatment process. The treated water blends with 11,000 acre-feet (3.6 billion gallons) of recycled water, for a total of 21,000 acre-feet of water that is piped to the San Gabriel Coastal Spreading Grounds where it percolates into the Central Basin.

This project reduces the need for new or expanded imported water supplies. As a result, WRD no longer relies on imported water from the Colorado River and Bay-Delta to replenish the Central Groundwater Basin, effectively adhering to the state's mandate to increase recycled water use and decrease dependence on imported water.

In 2017, WRD was awarded $4,272,000 plus an additional $19,500 in Title XVI funding for administration costs, for a total of $4,291,500. In 2018 and 2019, WRD applied for the remaining amount and received $4,184,193 and $6,000,000, respectively. In total, WRD has received $14,475,693 in Title XVI funding for this project. WRD is now requesting funding for the remaining portion ($10,976,808) of eligible expenses.

1.2. Technical Project Description

The Groundwater Reliability Improvement Program Recycled Water Project, herein referred to as GRIP, is the cornerstone of WRD's effort to achieve independence from imported water for groundwater replenishment. The project's substantial completion for construction was December 31, 2018 and the project was commissioned in 2019. GRIP introduces a new, local, drought-proof, high-quality advanced treated water source into one of the most highly urbanized groundwater basins in Southern California, which serves more than four million people across 43 cities.

The AWTF produces advanced treated recycled water that is combined with tertiary treated recycled water purchased by WRD from the Sanitation Districts of Los Angeles County (LACSD). This blended water is applied to the Montebello Forebay Spreading Grounds, an area with highly permeable soils that allows deep percolation of surface water. Seasonally in future operations, some advanced treated water will be injected into the aquifer for storage, using the three injection wells located at the facility. Currently, water supplies imported by Metropolitan Water District (MWD) originate in the Sacramento-San Joaquin River Delta (Delta) and are delivered through the State Water Project. At times, the Colorado River also contributes a portion of the imported water supply. GRIP eliminates WRD's use of imported water for groundwater replenishment activities in the Central Basin.

The facility was renamed the *Albert Robles Center for Water Recycling and Environmental Learning*, in honor of Director Albert Robles who served on WRD's Board of Directors from 1992 to 2018. For consistency with prior funding applications, we refer to the project as "GRIP" in this application and refer to the resulting recycled water campus as the "Advanced Water Treatment Facility."

Project Benefits

The overall goal of the GRIP Recycled Water Project is to produce recycled water which eliminates the use of imported water to replenish the Central Groundwater Basin.

Specifically, the project provides the following:

- A sustainable and reliable source of fully advanced treated water for groundwater replenishment via the Montebello Forebay Spreading Grounds and supplemental recharge wells.
- Implements a cost-effective and environmentally sound project.
- Protects and improves the groundwater quality of the basin.
- Complies with pertinent regulatory requirements employing an institutionally feasible approach.
- Provides approximately 21,000 AFY new replenishment water including 11,000 AFY of tertiary recycled water and 10,000 AFY of fully advanced treated water, consistent with the need to eliminate the use of 21,000 AFY of imported water.

By providing a locally sustainable and reliable replenishment source for the groundwater basins, this project keeps the cost of water affordable for ratepayers for the long term. WRD's project: protects the quality and quantity of local groundwater, uses less energy than imported water, and produces fewer greenhouse gas emissions than imported water.

Major Project Components

The AWTF consists of: the Process Building, the Administration and Learning Center, diversion structures and pipelines, spreading and injection facilities, a basin equalization tank, solar photovoltaic panels, a chemical storage area, an outdoor amphitheater, a San Gabriel River Watershed Model, and a park-like landscape with demonstration gardens. The descriptions of major components are listed below.

AWTF Process Building

A key component of the AWTF is the Process Building, which houses the technology to treat recycled water from LACSD's San Jose Creek Water Reclamation Plant to near distilled quality. The treatment technology is designed as a multi-barrier treatment process which uses ultrafiltration, reverse osmosis, and ultraviolet advanced oxidation as shown in Figure 1 and described below.

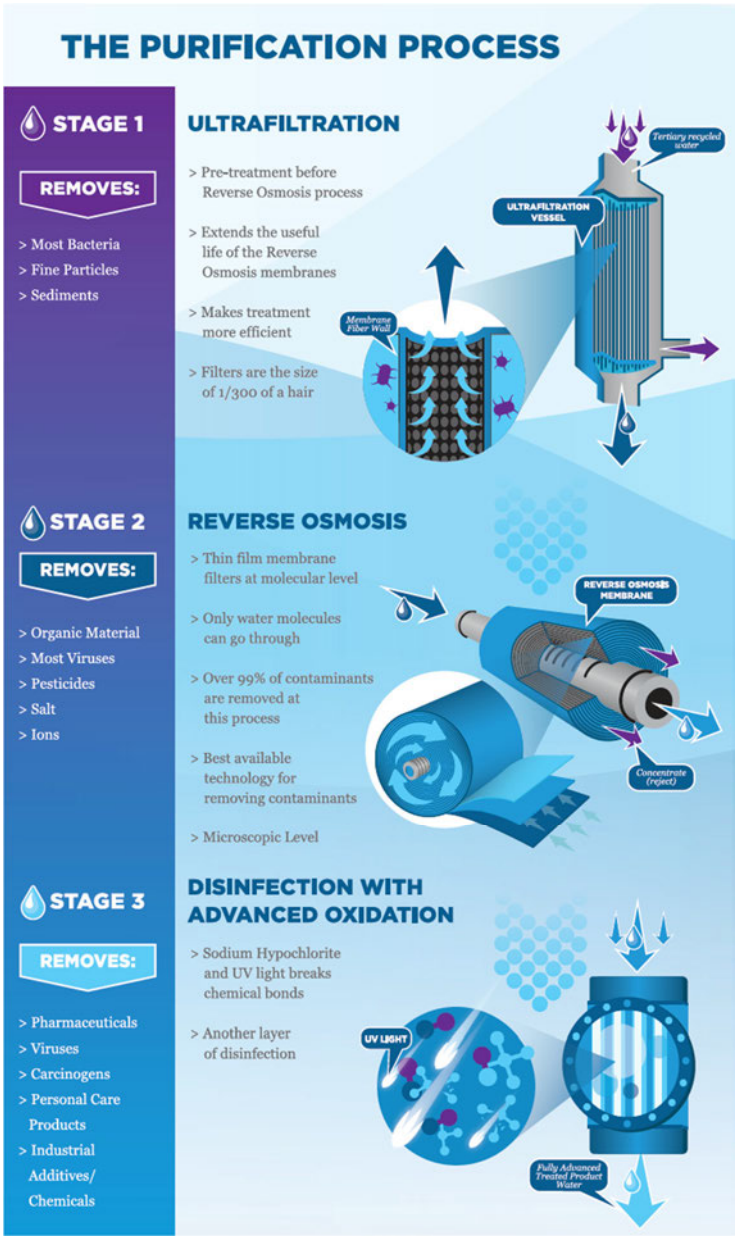
1) During the first stage of the purification process, ultrafiltration, water is filtered through fine membranes to remove bacteria, sediments, and other organisms. This makes the treatment process more efficient and extends the useful life of the membranes used in the subsequent stage.

2) The second stage of treatment is reverse osmosis, where the water is pushed through high-pressure membranes to eliminate salts, viruses, pesticides, and most organic compounds. Over 99% of contaminants are removed at this stage.

3) Water is then disinfected with advanced oxidation, which uses sodium hypochlorite and ultraviolet light to break chemical bonds, thereby removing pharmaceuticals, viruses, carcinogens, and other chemicals. The resulting water is considered "advanced treated recycled water" and is of near distilled quality.

The AWTF has a maximum production capacity of 14.8 million gallons per day, which corresponds to a yearly production of 13,702 acre-feet per year (AFY). Annual production is approximately 10,000 AFY on average, with the additional 3,000 AFY considered "reserve capacity." As a result of the commissioning process, the AWTF only produced 4,377 AFY and delivered 4,251 AFY of recycled water to the Montebello Forebay for groundwater recharge in 2019. However, in 2020 and 2021, the AWTF exceeded its goal of 10,000 AFY with a total production of 11,352 AF and 10,595 AF, respectively. The facility has been designed to expand to an ultimate production capacity of 29.6 MGD (referred to as Phase 2) without the need for additional construction.

Figure 1 – Advanced Water Treatment Process



Diversion Structures and Pipelines

Two diversion structures ("turnouts") have been constructed on an existing pipeline, which conveys tertiary-treated recycled water from the San Jose Creek Water Reclamation Plant. The first turnout diverts some recycled water from the pipeline into the Process Building for advanced treatment. The second turnout conveys advanced treated water back to the same pipeline, where it blends with recycled water and is conveyed to the Montebello Forebay Spreading Grounds. The pipeline and diversion structures are located immediately adjacent to the Process Building. A brine line conveys reverse osmosis concentrate from the Process Building to a sewer line located on Beverly Boulevard. The brine/effluent is ultimately treated at the Joint Water Pollution Control Plant in Carson, California.

Spreading and Injection Facilities

Facilities for groundwater replenishment water include (1) the Montebello Forebay Spreading Grounds, which is comprised of the Rio Hondo and San Gabriel Coastal Spreading Grounds, and (2) instream recharge which occurs in the San Gabriel River. Although the initial design for the Project included three injection wells for direct subsurface application to be employed during the seasonal rain and storm events, which limit the capacity of spreading operations, current recharge operations consist solely of surface application via Montebello Forebay Spreading Grounds and the San Gabriel River. In the future, these wells will operate when the capacity of the spreading grounds is limited by seasonal rains and stormwater. Under these conditions, pumps located in the product water storage tank will convey treated water to the injection wells. Fully advanced treated water is intended to meet regulatory requirements to allow aquifer replenishment without the need for diluent water. WRD has obtained the permits associated with the waste discharge requirements and water reclamation requirements from Los Angeles Regional Water Quality Control Board for these recharge activities.

Administration and Learning Center

An Administration and Learning Center building houses educational exhibits and facilities, community meeting rooms and administrative offices. The two-story building is Leadership in Energy & Environmental Design (LEED) Platinum certified standards for sustainability and is connected to the Process Building with a second story bridge. The Administration and Learning Center also houses conference and community rooms, facility maintenance rooms, and public outreach areas, such as an auditorium and exhibit/gallery space. The building is topped by a green rooftop terrace that includes a shaded sitting area and landscaped areas.

Due to the ongoing COVID-19 pandemic, the building remained closed to the public. Yet, staff was able to provide virtual tours and educational workshops to the public via various digital platforms, such as Zoom. Specifically, staff provided virtual tours to over 300 water industry stakeholders and educational workshops to 3,000 students. Once open to the public, public organizations, industry leaders, local stakeholder groups and schools, the building will facilitate in-person public outreach and education about recycled water treatment and water resources. There are thirty-eight exhibits showcased inside the Administration and Learning Center. Most exhibits utilize video and projection technologies, allowing for multi-lingual content and making updating or changing exhibits efficient and cost effective. For example, the Regional Water Use exhibit uses a projected video to illustrate the volumes of water used by residents, industry, and irrigation. Visitors will walk away with a new appreciation for where their water comes from, the importance of recycled water and stormwater capture to Southern California's water supply, water conservation, groundwater management, climate change impacts on water resources, careers in water management and more.

Park-like Landscape and Demonstration Gardens

The AWTF includes a park-like landscape with outdoor gathering areas and demonstration gardens throughout the project site that support the educational and meeting uses of the Administration and Learning Center. This campus provides public access to open space in the San Gabriel River corridor, education and learning experiences, meeting facilities and a classroom for community use, and educational programming focused on water resources including recycled water, water conservation, and water careers.

The innovative landscape design includes low-impact development and stormwater capture features, native and/or drought tolerant plants and trees, Monarch butterfly habitat, native plant demonstration gardens, an outdoor amphitheater and walking paths. The grounds are landscaped with a variety of low- to moderate-water-use shade trees, shrubs, and native and water-efficient plants reflecting the ecology of the San Gabriel River Corridor. The site includes a native riparian garden to capture and manage stormwater, a coastal inland native plant garden, and low-water-use demonstration gardens appropriate for Southern California. All plants conform to the Plant Palette (Reach 5) set forth in the San Gabriel River Master Plan.

The Process Building includes viewing galleries, which allow visitors to safely observe the recycled water treatment, signage and tours to explain the treatment processes, and a station for tasting finished water. Multi-lingual interpretive and directional signage are installed throughout the site. The AWTF also includes a working model of the San Gabriel River watershed, which shows how water is replenished from the mountains to the spreading grounds. The project is located in an underserved residential area and adjacent to the San Gabriel River Bike Path. With the ongoing COVID-19 pandemic, only virtual events have been allowed. However, when it is safe for in-person visitation, the facility will provide for both WRD and community events, conferring multiple benefits to economically disadvantaged communities in proximity to the project.

Status of the Project and Funds Requested

Substantial construction of the AWTF was completed on December 31, 2018 and commissioning began in 2019. Full operation of the AWTF began on January 1, 2020. Photos of the completed AWTF and Administration and Learning Center are provided in Appendix A.

Funds are requested from the Bureau to support engineering, construction and commissioning during the project period of July 12, 2017 to September 30, 2021. Construction was accomplished with a single design-build contract [redacted] The project delivery method that WRD chose (Public Code 22.160-22.166) allowed for a Transitional Operations Period. This ensured that WRD minimized risk and included provisions for water to be produced to specifications and at full capacity. Transferring risk in this way gave WRD confidence and security that the project would perform as planned. This method also provided for the Transitional Operator to have a larger role in operations. Design-Build team included [redacted] who lead construction and [redacted] who was the "transitional operator" and now the operator. WRD also had a contract with [redacted] to serve as the Owner's Engineer/Owner's Agent for the duration of construction and for the design components.

WRD commissioned the AWTF in 2019 and received the last approval under the Waste Discharge Requirements and Water Reclamation Requirements permit [redacted] in December 2019. The advanced treated water is operating and conveys water to the Montebello Forebay Spreading Grounds for groundwater recharge.

Role of WRD and the Need for This Project

As the largest groundwater agency in the State of California, WRD manages groundwater in two basins in Los Angeles County for 43 cities and almost four million residents. WRD ensures that a reliable supply of high-quality groundwater is available by managing and replenishing the groundwater basin.

California experienced a historic drought from 2012 through 2016 and faces continued challenges with insufficient or unreliable water supplies. Nearly 40% of the water consumed in WRD's service area is imported from the Colorado River or from Northern California. Prior to the GRIP Recycled Water Project, WRD used 21,000 AFY of imported water to replenish the Central Basin. The Delta and Colorado River are severely stressed, and the reliability of these water supplies is uncertain. The cost of imported water is projected to rise substantially as demand increases due to population growth, environmental protections, and variability of the statewide system resulting from climate change. The GRIP Recycled Water Project allows WRD to eliminate use of imported water for replenishment in the Central Basin.

Protect Los Angeles Region Economy

Water is critical to the Los Angeles County economy. With nearly $700 billion in annual output, Los Angeles County ranks among the world's largest economies. Its GDP is larger than Sweden, Norway, Poland or Belgium. The County's population of nearly 10 million would make it the 9th largest state in the U.S.[1] WRD has nearly 4 million residents in its service area.

Los Angeles County could suffer devastating impacts on its economy and quality of life if a major disruption to the region's imported water supplies were to occur. By developing local water supplies and maximizing groundwater storage, the GRIP Recycled Water Project helps to protect the economic vitality of the region.

Collaboration with Bureau of Reclamation

In 2016, the Bureau of Reclamation released the "SECURE Water Act Report," a basin-by-basin report characterizing the impacts of climate change in the west. In Southern California, warming and population growth are projected to increase water demand, reliance on imported water and the use of groundwater. This report emphasizes the importance of developing alternative water supplies, such as recycled water, to protect economic interests in the Los Angeles Basin.

WRD worked closely with the Bureau when preparing the *Title XVI Feasibility Study for the Groundwater Reliability Improvement Program Recycled Water Project*, which was completed in 2013. Bureau staff reviewed all environmental documents prepared for this project and concluded that they adequately identified and disclosed environmental effects. The Bureau then adopted the documents in accordance with National Environmental Policy Act (NEPA) regulations. The Bureau issued a NEPA Finding of No Significant Impact in December 2016 [redacted] determining that after implementation of mitigation measures, the Environmental Impact Report did not identify any potentially significant impacts to the environment.

In 2017, WRD was awarded $4,272,000 plus an additional $19,500 for administration costs, for a total of $4,291,500. In 2018 and 2019, WRD applied for the remaining amount and received $4,184,193 and $6,000,000, respectively. In total, WRD has received $14,475,693 in Title XVI funding for this project. WRD is now requesting funding for the remaining portion ($10,976,808) of eligible expenses to support the completion of construction.

[1] Los Angeles County Economic Development Corporation (LAEDC) website, https://laedc.org/wtc/chooselacounty/regions-of-la-county/

Participating Agencies and Contractual Commitments

Implementation and operation of this project is achieved through the cooperative efforts of the agencies listed in Table 1-1.

Table 1-1 Project Participants and Roles

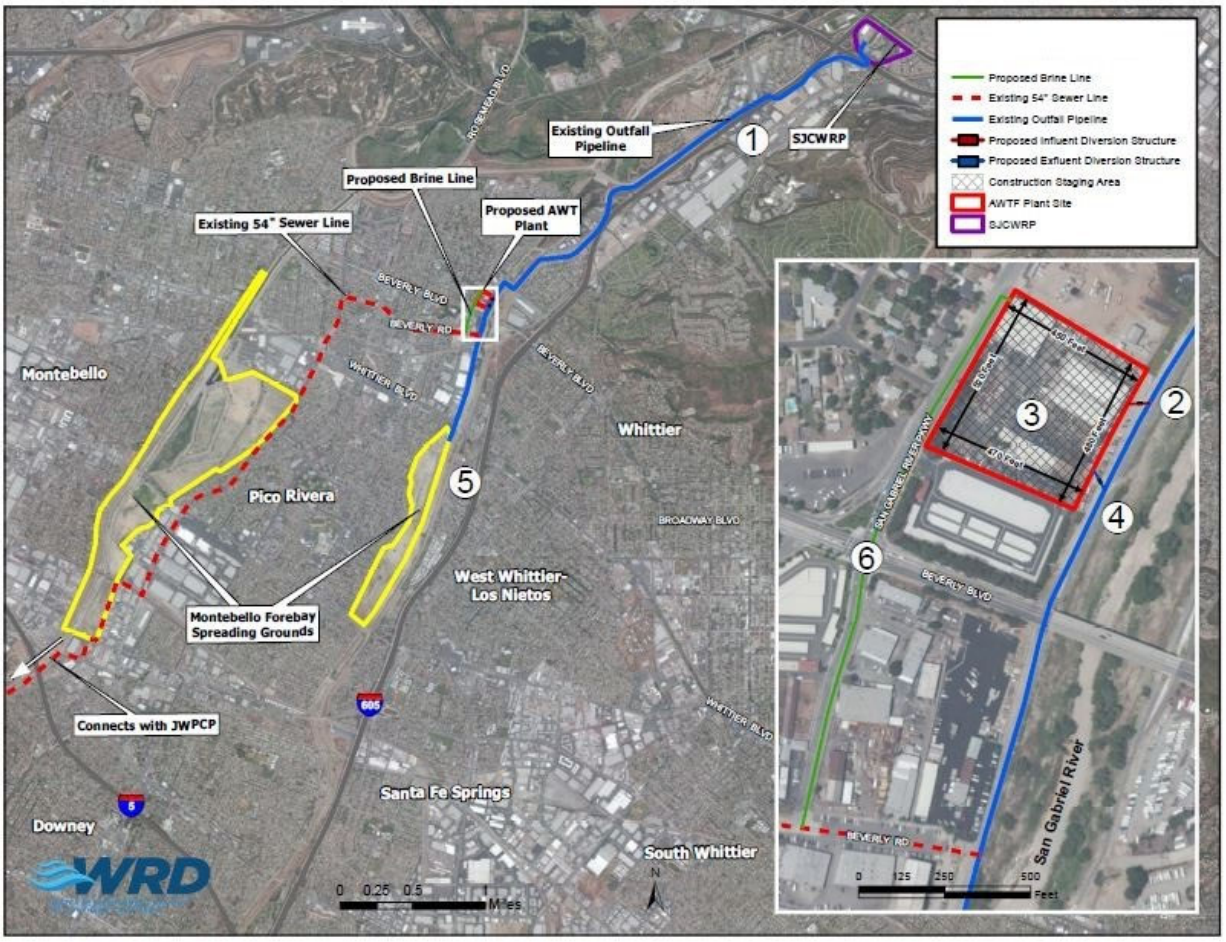
Project Participants	Roles
Water Replenishment District of Southern California (WRD)	WRD manages the adjudicated Central Basin and West Coast Basin (CBWCB) in Los Angeles County and purchases replenishment water for the Montebello Forebay Spreading Grounds. WRD owns and operates the GRIP AWTF and supplemental recharge wells. WRD serves as the lead agency under CEQA and certified the EIR and supplemental EIR for the GRIP AWTF and supplemental recharge well facilities. WRD is the agency responsible for the WDRs/WRRs for the GRIP AWTF project issued by RWQCB.
Los Angeles County Department of Public Works (LACDPW)	LACDPW owns, operates, and maintains the Rio Hondo and San Gabriel Coastal Spreading Grounds.
Sanitation Districts of Los Angeles County (LACSD)	LACSD serves as the regional wastewater management agency and owns and operates the San Jose Creek Water Reclamation Plant (SJCWRP). LACSD administers the source control program for industrial and commercial dischargers into the SJCWRP and has entered into a Memorandum of Understanding with WRD for operation of the source control program to meet California Code of Regulation Title 22 criteria.
State Water Resources Control Board Division of Drinking Water (DDW)	DDW regulates groundwater replenishment projects that use recycled water under the California Code of Regulation Title 22 criteria and they issue findings of fact for WDR/WRR development
Regional Water Quality Control Board, Los Angeles Region (RWQCB)	RWQCB issues the WDR/WRRs that regulate discharges to groundwater and surface water in the Los Angeles Region in accordance with the Los Angeles Region Water Quality Control Plan (Basin Plan) and State Policies and regulations.
State Water Resources Control Board (SWRCB)	SWRCB protects surface water and groundwater quality by setting statewide policies, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. SWRCB is solely responsible for allocating surface water rights.
United States Environmental Protection Agency (EPA)	EPA administers the Clean Water State Revolving Fund Loan program and maintains an inventory of Class V injection wells as part of the Underground Injection Program.

WRD worked closely with LACSD to ensure an allotment of recycled water for use in GRIP in order to secure the long-term interest of the project. On June 5, 2013, WRD and LACSD entered into an Agreement for the Purchase and Sale of Recycled Water. The Agreement describes the LACSD commitment to make available and sell to WRD an allotment of recycled water produced by its waste reclamation plants for the purpose of groundwater replenishment.

Project Location

The project includes planning, design, and construction of an AWTF and related infrastructure on 5.2 acres at 4320-4334 San Gabriel River Parkway in Pico Rivera, California. Pico Rivera is an inland city located between the Rio Hondo and San Gabriel River in central Los Angeles County, approximately 5 miles east of downtown Los Angeles, as illustrated in Figure 2. The Project is located near the intersection of San Gabriel River Parkway and Beverly Boulevard, and adjacent to the San Gabriel River, as further illustrated in Figure 2. It is bordered by a commercial storage facility to the south, City of Whittier pumping plant facilities to the north, parkway to the west, and the San Gabriel River to the east. A residential neighborhood is directly across the street.

Figure 2 – GRIP Recycled Water Project Regional Map



Central Groundwater Basin

Pico Rivera is in the Central Sub-basin of the Coastal Plain of Los Angeles Groundwater Basin. This sub-basin is commonly referred to as the "Central Basin." The Central Basin is an important source of local groundwater to the overlying residents and businesses, and typically meets approximately 40% of overall water supply needs in the basin. The Central Basin covers approximately 280 square miles and is bounded on the north and northeast by the Hollywood Basin and low-lying Elysian, Repetto, Merced, and Puente Hills. It is bounded on the southwest by the Newport-Inglewood Uplift and West Coast Basin and on the southeast by the Los Angeles-Orange County line and the Coastal Plain of the Orange County Groundwater Basin, as illustrated in Figure 5.

The GRIP project delivers advanced treated water to the Montebello Forebay Spreading Grounds to meet a portion of WRD's replenishment requirements. The Central Basin is divided into four hydrogeologic sub-areas including the Los Angeles Forebay, Montebello Forebay, Whittier Area, and Pressure Area. In forebays, confining layers are thin, absent, or more permeable than elsewhere in the basin and infiltration of precipitation and surface water can recharge deeper potable production aquifers. The Montebello Forebay is the most significant area of recharge in the Central Basin. Groundwater from the Montebello Forebay recharges the Los Angeles Forebay, Whittier Area, and Pressure Area.

Figure 3 – Regional Map Showing AWTF and Spreading Grounds for Recharge

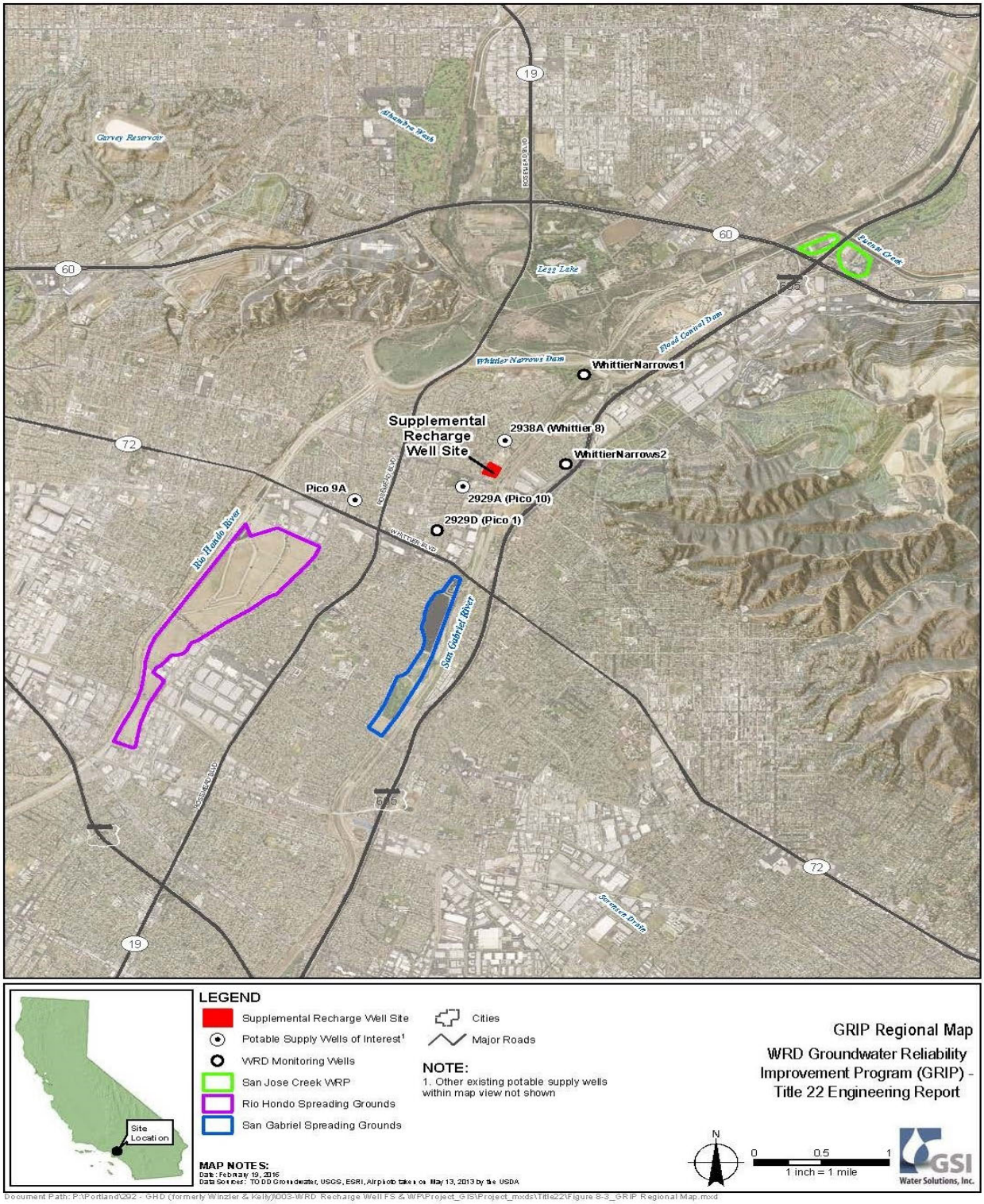


Figure 4 – Project Vicinity Map Showing AWTF and Recharge Wells

Figure 5 – Map of West Coast Basin and Central Basin

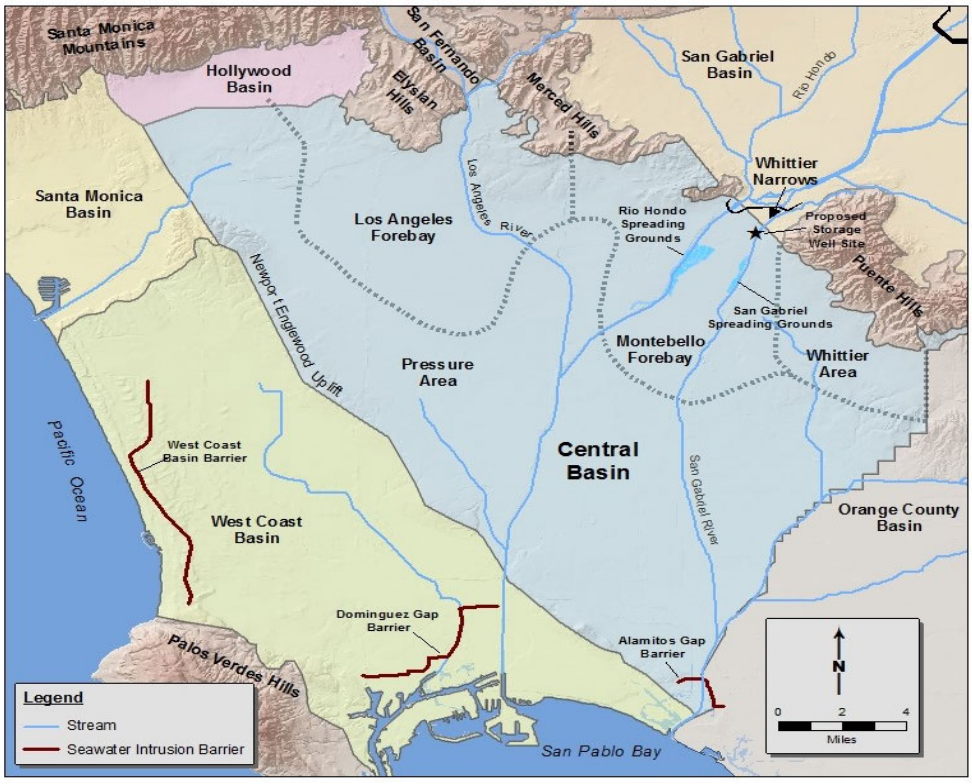
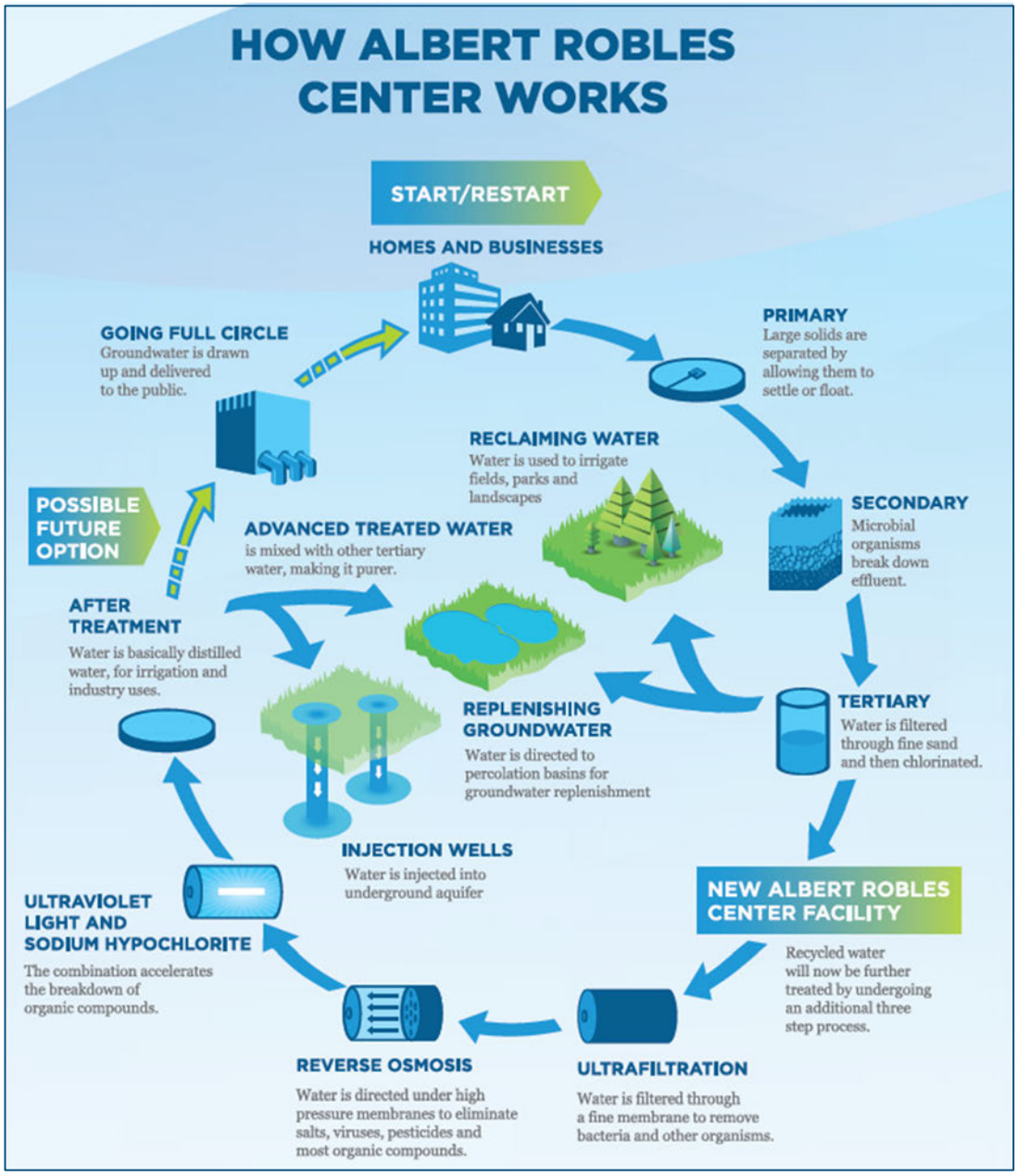


Figure 6 – Outreach example illustrating the AWTF treatment process[2]



[2] WRD has an extensive public outreach program for GRIP. The facility was recently renamed the Albert Robles Center for Water Recycling and Environmental Learning. This figure is an example of how WRD explains the treatment process and promotes public awareness and understanding of groundwater.

1.3.Evaluation Criteria

Evaluation Criterion 1—Water Supply

Subcriterion No. 1a—Stretching Water Supplies

1. *How many acre-feet of water are expected to be made available each year upon completion of the Project? What percentage of the present and/or future annual demand in the project sponsor's service area will the Project's reclaimed water provide upon Project completion? The percentage should be based on the total service area demand, not just recycled water demand. Use the total capacity of the entire Project upon completion, not just water savings for the activities that will be completed over the next 2 years.*

   The AWTF has a maximum production capacity of 14.8 million gallons per day, which corresponds to a yearly production of 13,702 acre-feet per year (AFY). Annual production is expected to be on average 10,000 AFY, with the additional 3,000 AFY being "reserve capacity." Since becoming fully operational, GRIP has exceeded the 10,00 AFY production average. Specifically, in 2020 and 2021 the AWTF had a total production of 11,352 AF and 10,595AF, respectively.

   The advanced treated water produced is blended with approximately 11,000 AFY of tertiary treated water and applied to the Montebello Forebay Spreading Grounds, where it percolates into the aquifer. Thus, the project's annual goal is to contribute 21,000 AFY to the region's groundwater supply, which comprises roughly 40% of the water supply for the service area. More specifically, the GRIP Recycled Water Project contributes approximately 17% of the total groundwater supply.

   Seasonally, up to 1.5 million gallons per day of advanced treated water may be injected into the groundwater basin with three injection wells located at the facility. Currently, the injection wells are not operational and are planned for future use.

   The facility has been designed with provisions to expand to an ultimate production capacity of 29.6 MGD (referred to as Phase 2), within the existing building footprint.

2. *Will the Project reduce, postpone, or eliminate the development of new or expanded non-recycled water supplies? Explain.*

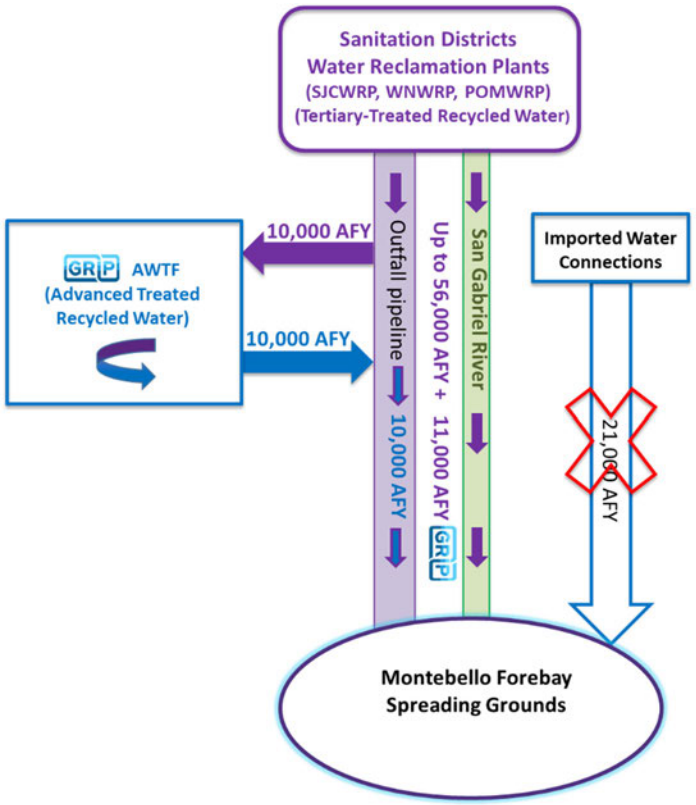
   Yes. Historically, WRD used imported water from the State Water Project for groundwater replenishment in this region of the Central Basin. The State Water Project collects water from the Sacramento-San Joaquin River Delta in Northern California and redistributes it to water-scarce regions, including Southern California. GRIP eliminated the use of imported water to replenish the Central Basin, and in this way, reduced demand for imported water.

   The AWTF is designed to support *Indirect Potable Reuse* by producing water that meets or exceeds standards for Subsurface Application, as described in California Code of Regulation, Title 22, Chapter 3, Article 5.2 prescribed by the State Water Board, Division of Drinking Water.

3. *Will the Project alleviate pressure on existing water supplies and/or facilities? If so, please describe the existing water supplies, identify the supplies and/or facilities that will be impacted and explain how they will be impacted by the Project, including quantifications where applicable.*

The project eliminates the use of imported water to replenish groundwater in the Central Basin and reduce demand on State and Federal water supplies by 21,000 acre-feet per year. This calculation is illustrated in Figure 7. WRD has historically used imported water for groundwater recharge at the Montebello Forebay Spreading Grounds. Water is imported to Southern California from two main sources: the Sacramento and San Joaquin River Delta (Bay-Delta) and the Colorado River. The Secretary of the Interior is the Watermaster on the lower Colorado River, and the Bureau of Reclamation is engaged in many significant efforts to find a long-term, comprehensive solution to achieve the dual goals of a reliable water supply for California and a healthy Bay-Delta ecosystem. By reducing the demand for water from the Delta and the Colorado River, GRIP makes it easier for the Bureau to meet all their other demands, including maintaining elevations in reservoirs in the Upper Colorado River Basin.

Figure 7 – The project delivers 21,000 acre-feet per year of recycled water for groundwater replenishment at the Montebello Forebay Spreading Grounds. Seasonally, some water will be injected directly into the aquifer.



4. *What performance measures will be used to quantify actual benefits upon completion of the Project?*

Anticipated benefits and the measures to quantify the actual project benefits are provided in Table 1-2.

Table 1-2 Performance Measures

Anticipated Benefits	Measures to Quantify Benefits
Improve groundwater quantity in Central Basin	Data from monitoring wells will be included in WRD's annual groundwater report
Create at least 21,000 AFY of new local water supplies for use at the Montebello Forebay Spreading Grounds (MFSG)	Meters will record water produced and applied to MFSG
Eliminate water imports for replenishment of Central Basin at MFSG	Annual report will show no water imports
Meet water quality standards for Indirect Potable Reuse (IPR)	Received permit for IPR from the Regional Board
Enhance water supply reliability against climate change, drought, and earthquakes	Water produced at the AWTF becomes part of WRD's supply portfolio
Create open space for adjacent economically disadvantaged communities	Photo-documentation of completed landscape
Establish native plant gardens and Monarch butterfly habitat	Photo-documentation of planted areas & habitat
Provide public education about recycled water and groundwater	Will report the numbers of visitors to the learning center; photo-documentation of interpretive exhibits

Benefits will be quantified for both the treatment facility and the project as a whole, by measuring and monitoring the production of the advanced treated water and by monitoring groundwater in the Basin, described in detail as follows.

Quantifying Production of Advanced Treated Water

Water flowing into and out of the AWTF is metered. Meters are installed at these six locations:

- AWTF inflow at ultrafiltration feed pumps
- Brine and waste flows to brine pipeline
- Secondary ultrafiltration filtrate returned to Equalization Tank
- Fully advanced treated water after ultraviolet advanced oxidation process and post-treatment
- Fully advanced treated water pumped to injection wells
- Tertiary recycled water over the weir of the equalization tank flowing to spreading basins

The six major meters are used to determine: the flow/volume of AWTF fully advanced treated water produced, AWTF brine and waste discharged to the sewer, fully advanced treated water sent to the supplemental recharge wells, and blended water sent to the spreading basins.

Treatment Process Monitoring

The AWTF Process Building contains an extensive system of continuous online monitoring equipment. This equipment and instrumentation are connected to a central control system where operations and water quality are measured, recorded, and monitored.

Measuring Benefits to Groundwater Management

As the regional groundwater management agency and the State's designated Groundwater Monitoring Entity for the Central Basin and West Coast Basin, WRD is responsible for monitoring and testing groundwater throughout the region. As part of this effort, WRD monitors groundwater levels and quality in the Central Groundwater Basin. Monitoring wells are used to assess the overall effectiveness of the replenishment efforts. Three monitoring wells are located on the AWTF grounds, and six more are located in the Montebello Forebay. Groundwater level monitoring, groundwater elevation contour maps, groundwater level change maps, and changes in groundwater storage estimates are presented annually in the *Regional Groundwater Monitoring Report* and *Engineering Survey and Report* produced by WRD.

Subcriterion No.1b—Contributions to Water Supply Reliability

1. *Will the Project make water available to address a specific concern? Consider the number of acre-feet of water and/or the percentage of overall water supply to be made available by the Project. Explain the specific concern and its severity. Also explain the role of the Project in addressing that concern and the extent to which the Project will address it. Specific concerns may include, but are not limited to:*
    - *Water supply shortages*
    - *Water supply reliability*
    - *Groundwater depletion*
    - *Water quality issues*
    - *Natural disasters that may impact water supply infrastructure*
    - *Heightened competition for water supplies*
    - *Availability of alternative supplies*
    - *Increasing cost of water supplies*

Yes. The GRIP Recycled Water Project makes water available to address groundwater depletion in the Central Basin, and water supply reliability for the Los Angeles region in the face of persistent droughts, climate change, affordability, and increased competition for the precious water resources.

It is difficult to mention water in California without talking about the water crisis. Water is scarce and uncertain, which makes providing a reliable water supply for a growing state especially challenging. According to the 2020 Census, California's population reached 39.5 million people in 2020, which is about 12% of the population of the United States. California's ability to provide clean water is further challenged by climate change, groundwater depletion, and more frequent and intense droughts. Being prepared for the future

is vital to maintaining a healthy, thriving population and vibrant economy. Thus, innovative, local, drought-proof, diversified projects like GRIP are imperative.

This project moves WRD and Southern California toward a more sustainable water future. The AWTF is the last step toward independence from imported water. A local water supply derived from wastewater helps alleviate water supply shortages. The groundwater basins, which provide almost half of the water supply for the 4 million residents of the 43 cities in WRD's service area, are completely locally sustainable. This independence from imported water also reduces the risk of supply disruption caused by earthquakes and other natural disasters that could critically impact water delivery infrastructure.

The GRIP Recycled Water Project also addresses concerns identified in California's Recycled Water Policy, established by the SWRCB in 2013 to help address the state's uncertain water future. This policy encourages local and regional water agencies to strive for reliable, local, drought-proof water through an emphasis on water recycling, water conservation, and leak detection. The State Water Board Resolution 2013-0003 adopted the following four goals for California in the Recycled Water Policy:

1. Increase the use of recycled water over 2002 levels by at least one million acre-feet per year (AFY) by 2020 and by at least two million AFY by 2030.
2. Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.
3. Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.
4. Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

The project meets Policy Goals 1 and 4. The Recycled Water Policy also states, "We declare our independence from relying on the vagaries of annual precipitation and move toward sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater." The GRIP Recycled Water Project establishes a sustainable replenishment supply that is not subject to fluctuating precipitation amounts and imported water availability.

2. *Will the project address climate change? E.O. 14008: Tackling the Climate Crisis at Home and Abroad focuses on increasing resilience to climate change and supporting climate resilient development. E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity. Please describe how the project will address climate change.*

   Yes. The GRIP Recycled Water Project increases resilience to climate change for the Los Angeles region by reducing reliance on imported water and developing a reliable local water supply. With the changing climate, Southern California has experienced warmer temperatures with less rainfall and snow. Drought conditions in the region are more frequent and severe, impacting the reliability of imported water supplies. The project reduces reliance on imported water supply by using locally produced water to replenish the groundwater basin, which is

much more resilient to the impacts of climate change and drought. The GRIP Recycled Water Project is a step towards independence from imported water in Southern California.

In addition to the uncertainty of the reliability of imported water, conveying water from the Bay-Delta and Colorado River requires a large amount of energy. As a local project, the GRIP project requires less energy than imported water to deliver water and produces fewer greenhouse gas emissions than imported water.

3. *Will the project help create additional flexibility to address drought?*

Yes. The Project creates additional flexibility by eliminating WRD's reliance on vulnerable imported water, which is greatly impacted by drought conditions. In the 2012-2016 drought, imported water allocations fluctuated, limiting the water available to the region and to replenish the basin. As part of the GRIP Recycled Water Project, the AWTF and tertiary treated recycled water replace 21,000 AFY of imported water use. The GRIP Recycled Water Project provides a reliable local supply to replenish the groundwater basin and is not impacted by the fluctuating allocations of imported water during a drought, thus giving WRD significant operational flexibility in allocating water during droughts.

Will water made available by this Project continue to be available during periods of drought?

Yes. The source water for the AWTF is tertiary-treated recycled water from the San Jose Creek Water Reclamation Plant, which is independent of drought conditions. LACSD has agreed to make 23,000 AFY available for the AWTF for at least 30 years.

To what extent is the water made available by this Project more drought-resistant than alternative water supply options? Explain.

Imported water supplies are extremely vulnerable to drought impacts, are often curtailed by drought, and are not as reliable as local water sources. Recycled water is widely considered to be a drought-proof water supply. The AWTF will treat recycled water to replace use of imported water for replenishment. This unreliability of imported water is apparent in the contract between California Department of Water Resources (DWR) and the Metropolitan Water District of Southern California, in which DWR claims the right to reduce the amount of water allocated to MWD during shortages due to drought or any other cause whatsoever. In the 2012-2016 drought, water allocations fluctuated and at times were as low as 5% of allotment. The collapse of the Bay-Delta ecosystems and severe drought on the Colorado River threaten Southern California's ability to import water consistently. Development of local recycled water sources, such as WRD's state-of-the-art GRIP Recycled Water Project, is key to creating independence from imported water.

4. *Has the area served by the Project been identified by the United States Drought Monitor as experiencing severe, extreme, or exceptional drought at any time in the last four years?*

Yes. According to the United States Drought Monitor, Los Angeles County experienced severe drought in 2018 and 2021. Drought conditions progressed to extreme and exceptional drought

from 2014 to 2017 and in 2021 prompting Governor Newsom to declare a state of drought emergency. By creating a local water supply alternative, WRD is preparing for potential and longer cycles of drought brought on by climate change.

5. *Has the area served by the Project been designated as a drought disaster area by the State in the last four years?*

   Following the second driest year on record, the Governor of California designated Los Angeles County as a drought disaster area in 2021.[3]

[3] News Release: "Governor Newsom Expands Drought Demergency Statewide, Urgest Californians to Redouble Water Conservation Efforts" (Oct. 19, 2021). Governor Newsom Expands Drought Emergency Statewide, Urges Californians to Redouble Water Conservation Efforts | California Governor

Evaluation Criterion 2—Environment and Water Quality

1. *Will the Project improve the quality of surface water or groundwater? If so, how?*

   Yes. The AWTF improves the quality of groundwater by producing high-quality recycled water for groundwater replenishment. Except for rain, advanced treated water is the highest quality water available for recharging the Montebello Forebay with respect to total dissolved solids, chloride and nitrate. This is discussed in the Final *Salt and Nutrient Management Plan for the Central Basin and West Coast Basin* accepted by the Regional Water Quality Control Board in February 2015. However, it is necessary to blend advanced treated water produced at the AWTF with tertiary-treated water to maintain biological function in the recharge basins. The amount of advanced treated water should not exceed 75% of the blend.

   Additionally, the AWTF includes best practices to protect surface water quality. Features include on-site stormwater retention and treatment; low-impact development such as permeable paving, bio-swales, tree wells, green roof and landscaping, which reduce runoff and reduce the risk of flooding. Stormwater will be directed into the Process Building, treated, and added to the water supply. The project site is directly adjacent to the San Gabriel River, so water quality protections and improvements are especially important.

2. *Will the Project improve effluent quality beyond levels necessary to meet State or Federal discharge requirements?*

   Yes. The source water for the AWTF is disinfected tertiary-treated recycled water from the San Jose Creek Water Reclamation Plant. This recycled water is treated at the AWTF to produce water of nearly distilled quality.

   The membrane system design for the AWTF includes direct feed ultrafiltration followed by first and second stage primary brackish water reverse osmosis (~91.7% of finished water) combined with third stage secondary brackish water reverse osmosis (~8.3% of finished water). The water produced at the AWTF is more than 50 times better than tertiary treated recycled water in terms of chemical contaminants, and more than 1,000,000 times better in terms of biological contaminants, such as bacteria and viruses.

   In September 2018, WRD received the Waste Discharge Requirements and Water Reclamation Requirements permit [redacted] from the Regional Water Quality Control Board to operate the facility. The permit was also approved by the State Water Resources Control Board Division of Drinking Water. Furthermore, WRD received approval to discharge product water to the spreading grounds in December 2019.

3. *Will the Project improve flow conditions in a natural stream channel? If so, how?*

   Yes. The GRIP Recycled Water Project reduces demand on the Delta and on the Colorado River systems by replacing imported water with a local, sustainable water source. Water that would have been imported from these water systems is theoretically left in the systems to improve flow conditions and habitats in those locations.

4. *Will the Project restore or enhance habitat for non-listed species? If so, how?*

   The AWTF enhances habitat for non-listed species with a park-like setting at the project site that includes native plant landscaping, Monarch butterfly habitat, and demonstration gardens. Monarch butterflies are a migratory species proposed for endangered species candidate status. Trees, host plants and a variety of native flowering plants support these and other pollinators. The campus is landscaped with a variety of low- to moderate-water-use shade trees, shrubs, and native and water-efficient plants reflecting the ecology of the San Gabriel River Corridor Upper Reach 5. The site includes a native riparian garden to capture and manage stormwater, a coastal inland native plant garden, and low-water-use demonstration gardens appropriate for Southern California.

5. *Will the Project provide water or habitat for federally listed threatened or endangered species? If so, how?*

   Yes. The project creates water for federally listed species. By creating a local, sustainable supply of water to replace water imports, the GRIP project reduces demand for water from the Delta and from the Colorado River system. Both river systems have federally listed threatened or endangered species which are highly impacted by operation of the water systems.

   The Project also creates a small amount of habitat for the Monarch butterfly, a migratory species proposed for endangered species candidate status whose numbers have suffered a steep decline since the mid-1990s due to extreme habitat loss. Before the start of construction, the U.S. Fish and Wildlife Service was conducting an assessment of the Monarch butterfly using the Species Status Assessment framework under the Endangered Species Act (ESA). Monarch habitat is of particular concern in California. In October 2015, Governor Brown signed into law AB 599 authorizing the state to "take feasible actions to conserve Monarch butterflies (Danaus plexippus) and the unique habitats they depend upon for successful migration." GRIP grounds include a butterfly garden with native milkweed species, other nectar sources to provide feeding habitat, and a coastal inland native plant garden.

Evaluation Criterion 3—Economic Benefits

Economic Conditions Influencing the Development of the GRIP Recycled Water Project

Prior to 2019, WRD used 21,000 acre-feet of imported water each year at the Montebello Forebay Spreading Grounds. Since October 2011, when Metropolitan terminated its discounted replenishment water program, replenishment agencies have relied on the more expensive Tier 1 or Tier 2 water. Because of the increasing price of Tier 1 water, WRD began looking for ways to reduce costs. The GRIP Recycled Water Project reduces the necessity for 21,000 AFY of imported water for groundwater replenishment.

Subcriterion No. 3a—Cost Effectiveness

1. *Reclamation will calculate the cost per acre-foot of water produced by the Project using information provided by Project sponsors. Please provide the following information for this calculation:*

(a) *The total estimated construction costs, by year, for the Project (include all previous and planned work)*

The GRIP Recycled Water Project is a "design-build" project, therefore design costs are included within the final negotiated fixed-price for construction as follows.

Table 1-3 Construction Costs by Year

	Calendar Year	Construction Cost
1.	2016	$15.9 million
2.	2017	$26.4 million
3.	2018	$55.5 million
4.	2019	$14.8 million
5.	2020	$5.2 million
	TOTAL	**$117.8 million**

(b) *The total estimated or actual costs to plan and design the Project. Note: This should not include the cost to complete a feasibility study that meets the requirements of Reclamation's Directives and Standards WTR 11-01.*

Table 1-4 Actual Design Costs

Description	Cost
Planning:	
Industrial Discharge Permit (connection fee)	$12,700,000
Project Management (Owner's Engineer/Owner's Agent) Deconstruction Offsite Improvements Design	$14,550,000
TOTAL	**$27,250,000**

(c) *The average annual operation and maintenance costs for the life of the Project. Please do not include periodic replacement costs in the operation and maintenance costs. Periodic replacement costs should be provided separately in response to (f) below. Note: This is an annual cost—not total cost.*

$6.2 million

(d) *The year the Project will begin to deliver reclaimed water.*

January 2020 (delivered replenishment water)

(e) *The Projected life (in years) that the Project is expected to last. Note: this should be measured from the time the Project starts delivering water.*

30 years

(f) *All estimated replacement costs by year. If there are multiple replacement costs in one year, or at the same interval, please total them and put them on one line with the year or interval.*

Year 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, and 28 will each have the following replacement costs:

Ultraviolet Ballasts/Bulbs/Sleeves = $ 365,000 (Replaced in 2021)
Secondary Reverse Osmosis Membrane = $ 250,000 (Replaced in 2021)
TOTAL = $ 615,000

Year 5, 10, 15, 20 and 25 will each have the following replacement costs:

Primary Reverse Osmosis Membrane = $1,250,000

Year 10 and 20 will each have the following replacement costs:

Primary Ultrafiltration Membrane = $1,600,000
Recovery Ultrafiltration Membrane = $ 250,000
TOTAL = $1,850,000

Table 1-5 Estimated Replacement Costs by Year

	Description of Replacement Requirement	Interval	Year	Total Cost
1.	Ultraviolet Ballasts/Bulbs/Sleeves; Secondary RO Membranes (Both were replaced in 2021)	Every 2 years	2023, 2025, 2027, 2029, 2031, 2033, 2035, 2037, 2039, 2041, 2043, 2045, 2047	**$ 615,000**
2.	Primary RO Membranes	Every 5 years	2024, 2029, 2034, 2039, 2044	**$1,250,000**
2.	Primary and Recovery UF Membranes	Every 10 years	2029, 2039	**$1,850,000**

(g) *The maximum volume of water (in acre-feet) that will be produced annually upon completion of the Project. This volume of water must correspond to the costs provided above. If costs are only provided for a portion or phase of the project, then only the water produced by that same portion or phase of the project will be considered under this criterion.*

The AWTF is designed with a maximum production capacity of 14.8 MGD, which corresponds to a yearly production of 13,702 acre-feet per year (APY). Annual production is on average 10,000 AFY, with the additional 3,000 AFY being "reserve capacity." Advanced treated recycled water upon blending with Title 22 recycled water, will enable WRD to achieve its goal of recharging the Central Basin with 21,000 acre-feet of recycled water annually, eliminating water imports for this purpose. GRIP infrastructure is expandable to a maximum future capacity of 29.6 MGD (referred to as Phase 2).

2. *Reclamation will calculate the cost per acre-foot for the Title XVI Project using the information requested in question No. 1 and compare it to the nonreclaimed water alternative, and any other water supply options that the applicant identifies to evaluate the cost effectiveness of the Project. Please provide the following information for this comparison:*

(a) *A description of the conditions that exist in the area and projections of the future with, and without, the Project.*

California experienced historic droughts from 2012 through 2017 and in 2021. California faces continued challenges with insufficient or unreliable water supplies. Nearly 40% of the water consumed in WRD's service area is imported from the Colorado River or from Northern California. Prior to the GRIP project, WRD used 21,000 AFY of imported water to replenish the Central Basin. The Delta and Colorado River are severely stressed, and the reliability of these water supplies is uncertain. The cost for imported water is projected to rise substantially as the demand for water increases, climate change introduces more variability in the supply and environmental resource conflicts are addressed in the source areas.

The GRIP Recycled Water Project allows WRD to eliminate the use of imported water for replenishment in the Central Basin. By providing a locally sustainable and reliable replenishment source for the groundwater basins, the AWTF keeps the cost of groundwater affordable for ratepayers for the long term. The project protects the quality and quantity of local groundwater, uses less energy than imported water, and produces fewer greenhouse gas emissions than imported water.

(b) *Provide the cost per acre-foot of other water supply alternatives that could be implemented by the non-Federal Project sponsor in lieu of the Project. This must include, but is not limited to, one nonreclaimed water alternative that would satisfy the same demand as the Project. Other water supply alternatives beyond one nonreclaimed water alternative are not required, but may be provided where available to demonstrate the cost effectiveness of the Project.*

In Table 1-6, the cost of water produced at GRIP ($539/AF) is compared to the cost of imported water ($1,035/AF), for a savings of $496/AF.

Table 1-6 Cost Per Acre-Foot

Advanced Water Treatment Facility Costs	
Total Project Cost	$132,362,051
Grant Funding (Prop 1 grant and Rivers and Mountains Conservancy grant)	$16,000,000
Capital Cost ($)	$116,362,051
Contingency (additional 3%)	$0
Total Capital Cost ($)	**$116,362,051**

Advanced Water Treatment Facility Financing	
SWRCB Low Interest Loan:	$80,000,000
Interest Rate (%) =	1%
Term (Years) =	30
Payment =	$3,099,849
2018 Certificates of Participation	$36,362,051
[redacted]	[redacted]
Subtotal Annualized Capital Cost =	**$5,172,140**

Advanced Water Treatment Facility Annualized Costs	
Annualized Capital Costs =	$5,172,140
Annualized O&M Costs ($) =	$6,154,239
Annualized Total Cost	$11,326,379

Cost per Acre-Foot	
Total Cost	$11,326,379
Cost per AF of advanced treated water (10,000 AF)	$1,132.64
Overall GRIP Cost per AF (AWTF + Tertiary) (21,000 AF)	**$539**

Cost of Nonrecycled Alternative: Imported Water Rates per Acre-Foot	
Metropolitan Water District Untreated Tier I (Rates effective July 1, 2021)	$777
Central Basin Municipal Water District Admin Service Charge (Rates effective July 1, 2021)	$198
Metropolitan Water District Readiness to Serve (RTS) (2021-22 Rate)	$60
Total Cost per AF Imported Water	**$1,035**
GRIP Savings	**$496**

(c) If available, provide the cost per acre foot of one water supply project with similar characteristics to the Project. This information does not have to be provided if it is not available. It is intended to provide another possible comparison to demonstrate the cost effectiveness of the Project.

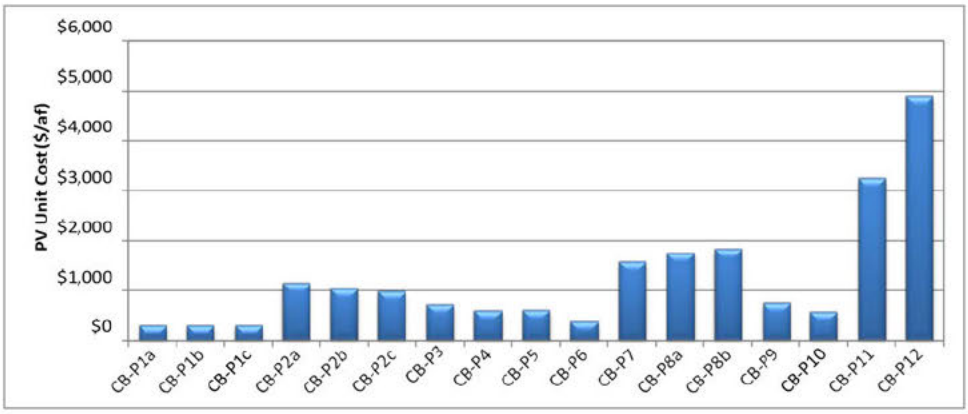
As shown in Figures 8a and 8b, the 2016 *Groundwater Basins Master Plan* examined twelve potential new water supply projects in the Central Basin that included surface spreading and/or injection of recycled water and/or captured stormwater. Although the GRIP Recycled Water Project is not listed in the table, its cost of $539/AF is much lower than the other projects in the Central Basin.

Figure 8a - Cost Comparison of Other Recycled Water Projects in the Central Basin[4]

Project ID	Project Description	Annual Yield (AFY)	Total Capital Cost ($M)	Total Annual O&M ($M)	Total Water Purchase ($M)	Total Present Value ($M)	Present Value Unit Cost ($/af)
CB-P1a	SJCWRP to MFSG (100% Tertiary)	5,000	$0.0	$0.0	$1.500	$30	$300
CB-P1b	SJCWRP to MFSG (100% Tertiary)	10,000	$0.0	$0.0	$3.000	$59	$300
CB-P1c	SJCWRP to MFSG (100% Tertiary)	17,600	$0.0	$0.0	$5.280	$104	$300
CB-P2a	SJCWRP to MFSG (100% AWT)	5,000	$52.1	$2.6	$0.588	$115	$1,160
CB-P2b	SJCWRP to MFSG (100% AWT)	10,000	$84.8	$5.0	$1.176	$206	$1,040
CB-P2c	SJCWRP to MFSG (100% AWT)	17,600	$134.0	$8.7	$2.071	$346	$990
CB-P3	SJCWRP to MFSG (50% AWT)	10,000	$52.1	$2.6	$2.088	$144	$730
CB-P4	SJCWRP to MFSG (100% NF)	10,000	$59.9	$2.0	$1.136	$121	$610
CB-P5	SJCWRP to MFSG (50% NF)	10,000	$50.2	$2.5	$1.156	$123	$620
CB-P6	SJCWRP to MFSG (Ozone/BAC/GAC)	10,000	$29.8	$1.1	$1.176	$75	$380
CB-P7	LCWRP to MFSG (100% AWT)	5,000	$77.3	$2.8	$0.588	$156	$1,580
CB-P8a	LCWRP to Montebello Forebay Injection (100% AWT)	5,000	$93.8	$2.9	$0.588	$174	$1,760
CB-P8b	LCWRP to Montebello Forebay Injection (100% full advanced treated)	4,500	$98.7	$2.8	$0.529	$164	$1,840
CB-P9	GBOP	5,000	$60.7	$1.0	$0.000	$81	$820
CB-P10	ARRF	17,000	$147.6	$2.3	$0.000	$194	$580
CB-P11	SJCWRP to Montebello Forebay Injection (100% FAT)	8,690	$206.0	$16.9	$1.022	$561	$3,260
CB-P12	Satellite to Los Angeles Forebay Injection (100% full advanced treated)	45,480	$1,511.0	$61.3	$0.000	$4,398	$4,890

[4] *Groundwater Basins Master Plan* (2016), Table 5-6.

Figure 8b - Cost Comparison of Other Recycled Water Projects in the Central Basin[5]



For purposes of this proposal, WRD compared costs of similar recycled water projects in California. Table 1-7 illustrates that WRD's $539 per acre-foot is a cost-effective project compared to others. While not the least expensive, the GRIP Recycled Water Project is in the lower range of projects. The California Public Utilities Commission expects "that future costs for water service will rise as new sources are developed."

Table 1-7 Cost Comparison of Other Recycled Water Projects in California[6]

Agency	Project	Production/ treatment	Cost Per Acre Foot	Project Cost
OCWD/OCSD	Groundwater Replenishment System	112,000 AFY	$476	$486.9M
WRD	**GRIP Recycled Water Project**	**21,000 AFY**	**$539**	**$132.4M**
Padre Dam Municipal Water District	Padre Dam Indirect Potable Reuse Project Phase 2	12,096 AFY	$958	$76M
Eastern Municipal Water District	Indirect Potable Reuse Program	15,000 AFY	$1,457	$85M
Metropolitan Water District of Southern California	Regional Recycled Water Advanced Purification Center	168,000 AFY	$1,830	$3.4B
Santa Clara County Wastewater Authority	South County Water Expansion Project	1,120 AFY	$2,901	$98M

[5] *Groundwater Basins Master Plan* (2016), Figure 5-11.

[6] Sacramento Regional County Sanitation District, *Water Recycling at a Glance in California*, https://www.regionalsan.com/sites/main/files/file-attachments/cost-comparison.pdf
California Public Utilities Commission, *What Will be the Cost of Future Water Resources in California?*, https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Divisions/Policy_and_Planning/PPD_Work/PPD_Work_Products_(2014_forward)/PPD%20-%20Production%20costs%20for%20new%20water.pdf
Orange County Water District, *Examining the cost of building and operating a water purification system to provide a new a pure solution to Orange County's water needs source of water for an arid region*, https://www.ocwd.com/media/1854/white-paper-cost-of-gwrs.pdf
Regional Recycled Water Advanced Purification Center, *Regional Recycled Water Program Developing a new source of water for Southern California*, http://www.mwdh2o.com/DocSvcsPubs/rrwp/assets/la_regional_water_quality_control_board_meeting_12-13-18.pdf

(d) Discussion of the degree to which the Project is cost-effective. Including, where applicable, a discussion of why the Project may be cost effective even if the overall Project cost appears to be high.

A preliminary economic analysis was conducted by CH2M HILL to support the *Title XVI Feasibility Study for the Groundwater Reliability Improvement Program Recycled Water Project*, as summarized below in the response to Subcriterion No. 3b.

The selected "hybrid" alternative, wherein water produced at the AWTF is blended with tertiary treated recycled water from the San Jose Creek Water Reclamation Plant, offered a compromise approach between using only tertiary treated water or advanced treated water. More specifically, it offered WRD the greatest degree of operational flexibility for spreading tertiary-treated recycled water and spreading and/or injecting advanced treated recycled water at a cost (both capital and operating and maintenance) that would fall between that of the other two project alternatives.

The GRIP Recycled Water Project is a cost-effective alternative compared to the rising price of imported water from the Metropolitan Water District of Southern California. The GRIP Recycled Water Project's $539/AF price tag is significantly lower than the current cost of imported water of $1,035/AF. WRD is saving approximately $496 per acre-foot and over $7 million a year.

Subcriterion No. 3b—Economic Analysis and Project Benefits

1. *Summarize the economic analysis performed for the Project including information on the Project's estimated benefits and costs. Describe the methodologies used for the analysis that has been conducted.*

   The project alternatives for the preliminary economic analysis were developed by CH2M HILL by combining and evaluating viable options in each of the four component areas—supply, treatment, conveyance, and recharge. Alternatives fell into four categories:

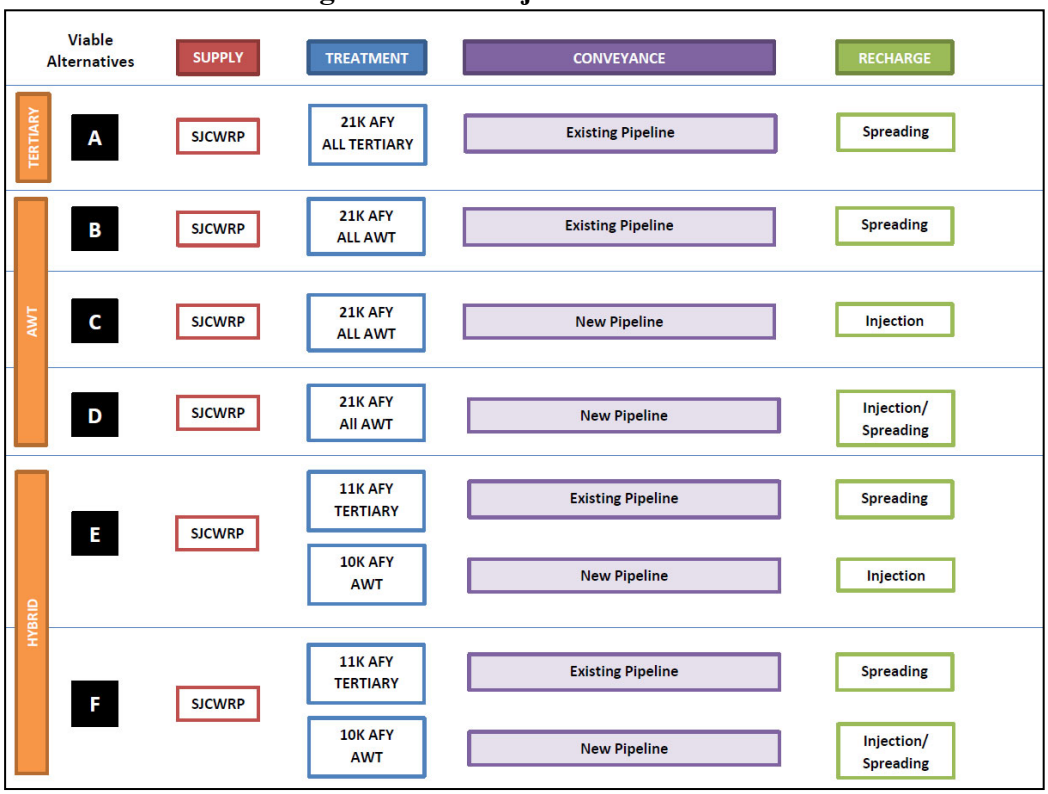
   - **"No project"**– Continued use of imported water for groundwater replenishment
   - **Tertiary**– Spreading an additional 21,000 AFY of tertiary-treated recycled water
   - **Advanced Water Treatment**– Spreading and/or injecting 21,000 AFY of advanced treated recycled water
   - **Hybrid**– Implementing a hybrid alternative using a combination of tertiary and advanced treated recycled water for groundwater recharge

   Excluding the "no project" alternative, six project alternatives were developed based on combinations of supply water, treatment technology, conveyance and recharge options. These alternatives are defined visually in the graphic provided in Figure 9 and labeled **A–F**. More specifically, there is one tertiary alternative (**A**), three advanced water alternatives (**B**, **C**, **D**) and two hybrid alternatives (**E**, **F**).

   All alternatives use supply water from the San Jose Creek Water Reclamation Plant (SJCWRP), as illustrated in red within Figure 9. Treatment technology is either tertiary treated, advanced treated or a combination of both, as illustrated in blue. Conveyance uses an

existing pipeline and/or new pipeline, as shown in purple, and recharge includes spreading and/or injection, as illustrated in green.

Figure 9 Six Project Alternatives[7]



A benefits analysis—described in detail hereafter in *subsection b)* —was used to short-list the most feasible alternatives for increasing groundwater recharge at the Montebello Forebay. These selected alternatives **A**, **D**, and **F** were renamed, respectively, "Alternative 1: Tertiary," "Alterative 2: AWT" and "Alterative 3: Hybrid," and summarized as follows:

- **Alternative 1: Tertiary** - Tertiary recycled water from the SJCWRP would be conveyed in the existing pipeline to the Montebello Forebay Spreading Grounds.
- **Alternative 2: Advanced Treated Water** - A new advanced water treatment plant would be constructed on, or adjacent to, the SJCWRP site for treating tertiary recycled water from the SJCWRP prior to recharge. Advanced treated water would be conveyed via a new pipeline. Recharge utilizes spreading grounds and injection wells.
- **Alternative 3: Hybrid** - This alternative is a hybrid of Alternatives 1 and 2, wherein a combination of tertiary-treated water and advanced treated water would be used for groundwater replenishment. Similar to Alternative 1, tertiary treated water from the SJCWRP would be conveyed in the existing pipeline to the Spreading Grounds. Additionally, similar to Alternative 2, a new advanced water treatment plant would be constructed on, or adjacent to, the SJCWRP site for treating tertiary-treated water from

[7] *Title XVI Feasibility Study for the Groundwater Reliability Improvement Program Recycled Water Project* (2012), Table 4-2.

the SJCWRP prior to recharge and conveyed in a new pipeline. Recharge utilizes spreading grounds and injection wells.

An economic analysis on these three "short-listed" alternatives was performed, which included estimating project costs and calculating the total present value of each project, described in detail hereafter.

a. Quantified and monetized Project costs, including capital costs and operations and maintenance costs.

Cost estimates developed within the Feasibility Study provide a relative comparison of the alternatives and are considered order-of-magnitude estimates[8]. The estimates were prepared to guide project evaluation and implementation from the information available at the time of the cost estimate. The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation schedule, continuity of personnel and engineering, and other variables.

Project costs for each of the three project alternatives in comparison to the "No Project Alternative" are presented in Table 4-2 of the Feasibility Study, repeated here as Table 1-8.

Table 1-8 Cost Opinion for Viable Alternatives[9]

	No Project Alternative	Alternative 1: Tertiary	Alternative 2: AWT	Alternative 3: Hybrid
Capital Cost ($)				
AWT Product Capacity (AFY)	0	0	21,000	10,000
AWT Product Capacity (MGD)	0	0	18.8	8.9
Pretreatment[a]	0	0	1,250,000	1,030,000
Microfiltration[b]	0	0	36,110,000	18,250,000
Reverse Osmosis	0	0	38,900,000	21,034,000
Ultraviolet Advanced Oxidation Process	0	0	15,090,000	8,800,000
Post Treatment[c]	0	0	1,150,000	990,000
Flow Equalization[e]	0	0	9,000,000	4,520,000
Third-Stage Reverse Osmosis for Brine Volume Reduction	0	0	9,045,000	4,384,000
Total Treatment Cost[d] ($)	**0**	**0**	**110,545,000**	**59,008,000**
Engineering, Legal and Administrative Fees (20%)	0	0	22,109,000	11,802,000

[8] The Association for the Advancement of Cost Engineering International defines order-of-magnitude costs as "Class 5" cost estimates without detailed engineering data. Examples of order-of-magnitude costs include an estimate from cost capacity curves, an estimate using scale-up or scale-down factors, and an approximate ratio estimate. The expected accuracy ranges for a Class 5 cost estimate are -15 percent to -30 percent on the low side and +20 percent to +50 percent on the high side.

[9] *Title XVI Feasibility Study for the Groundwater Reliability Improvement Program Recycled Water Project* (2012), Table 4-2.

	No Project Alternative	Alternative 1: Tertiary	Alternative 2: AWT	Alternative 3: Hybrid
Contingency (20%)	0	0	22,109,000	11,802,000
Total Treatment Cost with Engineering Fees and Project Contingency ($)	**0**	**0**	**154,763,000**	**82,612,000**
Sewer Connection Fee[i]	0	0	20,422,000	9,695,000
Flow Diversion	0	1,600,000	1,600,000	1,600,000
Total Capital Cost ($)	**0**	**1,600,000**	**176,785,000**	**93,907,000**
Other (Optional) Project Cost Items[f]				
Conveyance[g]	0	0	16,533,000	16,533,000
Injection[h]	0	0	24,000,000	12,000,000
Subtotal for Optional Project Cost Items ($)	**0**	**0**	**40,533,000**	**28,533,000**
Engineering, Legal and Administrative Fees (20%)	0	0	8,107,000	5,707,000
Contingency (20%)	0	0	8,107,000	5,707,000
Total Optional Project Cost with Engineering Fees and Project Contingency ($)	**0**	**0**	**56,747,000**	**39,947,000**
Total Capital Cost ($)	**0**	**1,600,000**	**233,532,000**	**133,854,000**
Total Capital Cost with Escalation to Midpoint of Construction (Year 2015) ($)	**0**	**1,749,000**	**255,187,000**	**146,266,000**
Present Value of Capital Cost[l] ($)	**0**	**1,749,000**	**255,187,000**	**146,266,000**
O&M Costs				
Annual O&M Cost for Facilities ($/yr)	0	0	15,807,000	7,528,000
Annual O&M Cost for Sewer Discharge[i] ($/yr)	0	0	588,000	279,000
Total Annual O&M Cost for AWT Facility ($/yr)	**0**	**0**	**16,395,000**	**7,807,000**
Present Value of O&M Cost for AWT Facility[l] ($)	**0**	**0**	**437,436,000**	**208,299,000**
Present Value of Imported Water Purchase[j,l] ($)	660,949,000	0	0	0
Present Value of Recycled Water Purchase[k,l] ($)	0	180,759,000	74,627,000	130,220,000
Present Value of O&M Cost[l] ($)	**660,949,000**	**180,759,000**	**512,063,000**	**338,519,000**
Total Present Value of Project[l] ($)	**660,949,000**	**182,508,000**	**767,250,000**	**484,785,000**
Present Value Unit Cost ($/AF)	**1,049**	**290**	**1,218**	**770**

Notes:

[a] Pretreatment includes feed water monochloramination to protect microfiltration and reverse osmosis membranes against biological fouling.

[b] Includes costs of strainers and break tank.

[c] Post treatment is achieved via liquid calcium chloride and caustic addition.

[d] AWT treatment capacity was estimated based on a 0.8 on-line factor.

[e] Reflects approximately 2.1-MG and 4.4-MG covered concrete tanks for 10,000 and 21,000 AFY cases, respectively. The flow equalization tank is sized to store 20 percent of the AWT influent flow per the *GRIP Conceptual Level Study* (MWH, 2009). The construction cost is for a concrete tank with a concrete cover.

[f] The cost for improvements to the MFSG are not included in this cost estimate.

[g] Conveyance cost for the 42" RCP represents the higher estimate between the Parallel Alignment and Durfee Avenue Alignment options.

[h] Cost of each injection well with a 2.0 MGD capacity is $2.0 million. The total number of wells for 21,000-AFY and 10,000-AFY cases is 12 and 6, respectively.

[l] Calculated using formulas provided by the Sanitation Districts. The cost accounts for brine volume reduction.

[j] The present value for imported water purchase cost under the No Project Alternative is based on $681/AF (2012 MWD Tier 1 Water Rate) and an annual MWD water escalation rate of 6 percent.

	No Project Alternative	Alternative 1: Tertiary	Alternative 2: AWT	Alternative 3: Hybrid
[k] As of October 2012, the recycled water purchase ceiling rate and floor rate is $270/AF and $81/AF, respectively. The present value for recycled water purchase cost is based on an annual Sanitation Districts recycled water escalation rate of 4 percent.				
[l] Bond (interest) rate of 5 percent over a period of 30 years and a general inflation rate of 3 percent was used to calculate present value. Present value calculated assuming midpoint of construction in 2015, with facility operations beginning in 2017.				

Taking the present value calculations from the Cost Opinion for each alternative yields the following comparison:

Table 1-9 Economic Evaluation Summary

	No Project Alternative	Alternative 1: Tertiary	Alternative 2: AWT	Alternative 3: Hybrid
Present Value of Capital Cost[a] ($)	0	1,749,000	255,187,000	146,266,000
Present Value of O&M Cost[b] ($)	660,949,000	180,759,000	512,063,000	338,519,000
Total Present Value of Project ($)	660,949,000	182,508,000	767,250,000	484,785,000
Present Value Unit Cost[c] ($/AF)	1,049	290	1,218	770

Notes:

[a] Capital costs include construction of treatment and conveyance facilities, injection, and flow equalization. Sewer connection fees and flow diversion costs are also included. The costs for improvements to the MFSG are not included in this cost estimate. Estimate assumes a 20 percent markup for engineering, legal, and administrative fees and a 20 percent contingency.

[b] O&M costs include facilities O&M, recycled water purchase, imported water purchase, and sewer surcharge fee. Present value is based on 30 years at 5 percent bond (interest) rate and a general inflation rate of 3 percent. Present value of imported water and recycled water purchase costs are based on an annual escalation rate of 6 percent and 4 percent, respectively.

[c] For comparison purposes only, cost assumes all capital financed at 5 percent for 30 years and does not include revenue from users or potential subsidies.

Results from this economic analysis show that the cost of importing water over the next 30 years at an annual escalation rate of 6 percent causes imported water to have the highest O&M costs in comparison to the three other project alternatives. With the uncertainty and volatility of imported water availability, along with rates over the next 30 years and beyond, the "No Project Alternative" was deemed economically infeasible.

In comparison, each of the remaining three project alternatives enables WRD and ultimately the region and the State of California to benefit from importing reduced amounts of water.

Note that the benefits of importing a reduced amount of water, along with the intangible benefits associated with improved groundwater quality, reduced wastewater discharge to the river, increased use of recycled water, as well as environmental benefits, are not reflected in the economic evaluation. Rather, these are considered qualitatively when comparing and realizing the true economic potential of each project alternative, as described hereafter in *subsection c)*.

b. *Quantified and monetized Project benefits. This includes benefits that can be quantified and expressed as a monetized benefit per acre-foot. This may include, but is not limited to, benefits related to water supply quantity and water supply reliability, recreational benefits, ecosystem benefits, water quality, energy efficiency, and environmental compliance and permitting. Benefits may also include the avoided costs of no action (i.e., the costs that would be incurred if the project were not implemented), and the willingness of users or customers to pay for a benefit or to avoid a negative outcome (e.g., the willingness of households to pay for a water supply system that would reduce groundwater overdraft). If quantified and/or monetized information for these benefits is not available, they may be addressed in response to question 2 below.*

As introduced above, the six preliminary alternatives illustrated in Figure 9 were narrowed down to a short-list of three alternatives using a "triple bottom line" evaluation. The evaluation criteria, weighting factors, and scores for each alternative were developed by CH2M HILL in collaboration with WRD and LACSD to compare viable alternatives in terms of their environmental, social, and economic impacts.

Within the "economic" category, three evaluation criteria were examined: life-cycle costs, supply reliability and operational flexibility. Alternatives received a score from 1-5, wherein a larger score represented the desired characteristics of lower life-cycle costs, higher supply reliability and maximum operational flexibility.

Table 1-10 summarizes the evaluation criteria, weights and scoring characteristics used to evaluate the preliminary six alternatives.

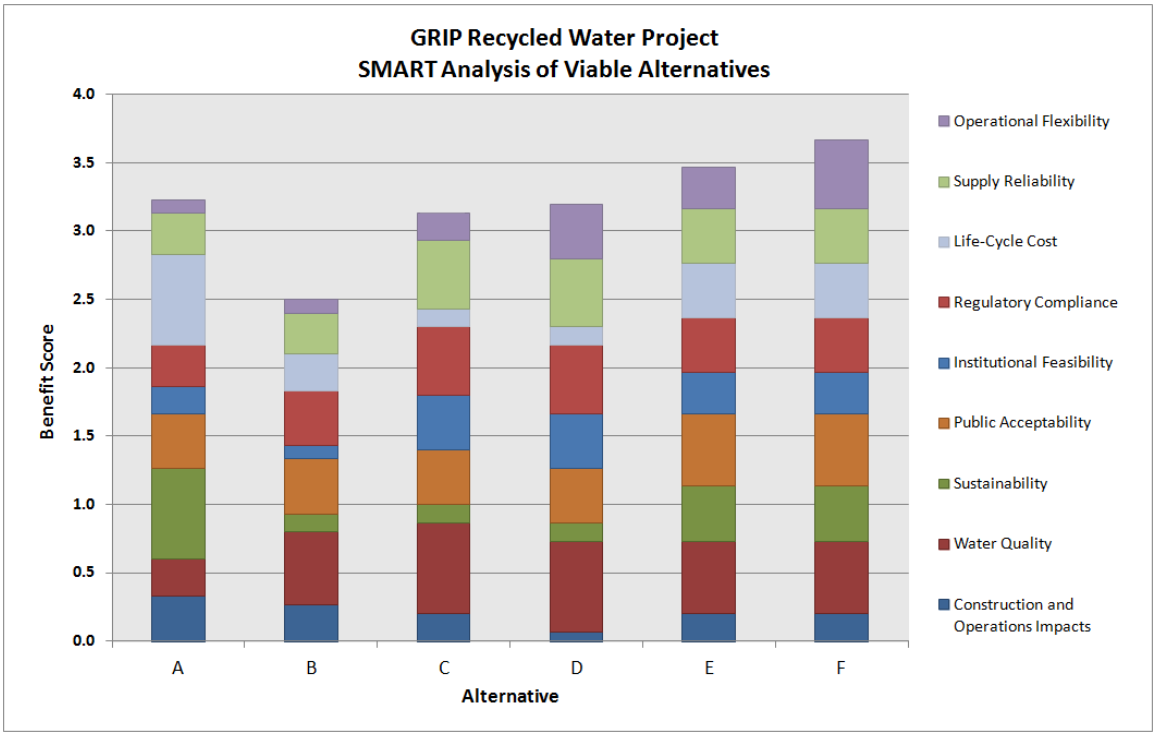
Table 1-10 Triple Bottom Line Evaluation Criteria, Weights and Scoring Characteristics

Category	Evaluation Criteria	Weight	Elements of Scoring Assessment	Scoring Characteristics
Environmental (total weight = 10)	Construction and Operations Impacts	2	Traffic impacts and commuter disruption Impacts to ecosystems By-product management	5 – Least overall impacts from facilities construction and operations 3 – Low to minimum long-term impacts; moderate construction impacts 1 – Greatest potential for impacts with emphasis on long-term operations
	Water Quality	4	TDS TOC Nutrients Trace contaminants	5 – Consistently produces high-quality water; greatest removals 3 – Very good water quality, but lower than highest level of removals 1 – Good water quality, but comparatively lower removals
	Sustainability	4	Power requirements Greenhouse gas emissions Fixed resource consumption Space constraints, facilities footprint	5 – Lowest in terms of power, greenhouse gases, consumption, and footprint 3 – Sustainable project; moderate resource/power consumption 1 – Sustainable project; comparatively higher in resource/power consumption
Socia l (total weigh	Public Acceptability	4	General public Basin pumpers	5 – Greatest likelihood of support from entire range of stakeholders 3 – Overall support for approach, but

Category	Evaluation Criteria	Weight	Elements of Scoring Assessment	Scoring Characteristics
			Public agencies/public officials	reservations by limited number 1 – Some support, but significant reservations by several stakeholders
	Institutional Feasibility	3	Rights-of-way and easement procurement, railroad, freeway and river crossings Required reviews, permits, and approvals Dependence on long-term, third-party contracts for services	5 – Easiest for procuring reviews/approvals/permits; limited third-party dependence 3 – Moderate for permits procurement; moderate dependence on third parties 1 – Potential for issues with permit procurement or high dependence on third parties
	Regulatory Compliance	3	Compliance with existing regulations Future compliance Ease of permitting	5 – Full compliance with existing regulations and potential future regulations 3 – Full compliance with existing regulations; good potential for future regulatory compliance 1 – Full compliance with existing; may have issues with future regulations
Economic (total weight = 10)	Life-Cycle Costs	4	Capital O&M	5 – Lowest total life-cycle costs 3 – Mid-range life-cycle costs 1 – Highest total life-cycle costs
	Supply Reliability	3	Seasonality of supply Potential variability	5 – Highest certainty of supply source and recharge capabilities 3 – Some limitations of certainty of supply source and/or recharge capabilities 1 – Lowest relative certainty of supply source or recharge capabilities
	Operational Flexibility	3	Ability to adjust to changing conditions, including supply and recharge	5 – Maximum flexibility to vary supply or recharge strategy 3 – Some ability to vary supply and/or recharge strategy 1 – Least flexibility to vary supply or recharge strategy

After scoring each alternative using the evaluation criteria and applying the appropriate weighting factors, benefit scores were developed using the Simple Multiple Attribute Rating Technique (SMART) model. The criteria results, as well as the cumulative benefit score for each alternative, are shown graphically in Figure 10.

Figure 10 SMART Analysis Results Illustration



The highest-ranking alternative in each of the three treatment-level categories (tertiary, advanced treated water, and hybrid) were alternatives **A**, **D**, and **F**, respectively, as shown in Figure 10. These were the three alternatives selected for the economic analysis.

c. *A comparison of the Project's quantified and monetized benefits and costs.*

Each of the three project alternatives enabled WRD and ultimately, the region and the State of California, to benefit by importing less water.

The Tertiary Alternative, although the least costly project alternative in terms of both capital and operating and maintenance costs, could only be used to replenish the groundwater basin via spreading at the Montebello Forebay Spreading Grounds. Spreading basins might not be available during wet periods when the basins are at capacity with stormwater runoff and/or precipitation. Thus, the Tertiary Alternative was susceptible to seasonal variations,

The Advanced Water Treatment Alternative had the highest capital and operating and maintenance costs among the three project alternatives due to the need to construct new treatment, conveyance, and recharge facilities. However, this alternative also realized the highest quality water and would improve groundwater quality by reducing salt and nutrient levels in the basin. This alternative also enabled WRD to benefit from operational flexibility because advanced treated water could be used to replenish the basin via spreading or injection. This provided WRD with a year-round source of recycled water for groundwater replenishment.

The Hybrid Alternative offered a compromise approach between the Tertiary and Advanced Water Treatment alternatives. The Hybrid Alternative offered WRD the greatest degree of operational flexibility for groundwater replenishment at a cost (both capital and operating and maintenance) that fell between that of the other two project alternatives. This alternative balanced quality and cost—an approach that would be acceptable to the public. The Hybrid Alternative required construction permitting but was less dependent than the Tertiary Alternative on third-party operations. Regulatory compliance for the Hybrid Alternative was more feasible than for the Tertiary Alternative but less than for the Advanced Water Treatment Alternative. The Hybrid Alternative required smaller-scale advanced water treatment facilities and injection wells, although the pipelines were the same size for both options. The mix of treatment levels and recharge options provided maximum operational flexibility.

2. *Some Project benefits may be difficult to quantify. Describe any economic benefits of the Project that are not captured above or that are difficult to quantify. Provide a qualitative discussion of the economic impact of these benefits. Points will be awarded based on the potential economic impact of the Project-related benefits. Some examples of benefits may include, but are not limited to, acres of land or stream miles that may be benefitted or not harmed, benefits to habitat or species, flood risk mitigation, local impacts on residents and/or businesses, job creation, and regional impacts. This may also include benefits listed in question 1, if they have not been monetized (e.g., water reliability, water quality, recreation, etc.).*

   Increased operational flexibility and the potential capture of local storm water

   The GRIP Recycled Water Project is intended to replace imported water with locally produced recycled water. Another effort—the Montebello Forebay Groundwater Recharge Project, operated under a separate permit and owned by LACSD—spreads tertiary-treated recycled water, imported water, and local storm water in the Rio Hondo and San Gabriel Coastal Spreading Grounds, and instream in the San Gabriel River. The GRIP Recycled Water Project creates potential for operational efficiencies in that project, including increased flexibility and increased potential for storm water capture.

   Increased regional economic activity

   Construction of the project has resulted in over $127 million spent in Los Angeles County. Over 300 jobs were created during construction including construction-oriented jobs and jobs for consultants. Furthermore, 9 full-time, long-term jobs were created. WRD will hold in-person tours, workshops, and education events at the visitor-friendly campus. Thus, visitors will bring additional business to the City of Pico Rivera and surrounding areas, adding economic activity.

   Improved water supply reliability

   The project improves water supply reliability in the region by creating a new, local potable water supply. Essentially eliminating the need for imported water for groundwater replenishment, the AWTF ensures that the region is protected from the health and economic impacts of potential emergency disruptions in imported water supply.

Improved public health

The facility provides designated parking and directional signage for the San Gabriel River Bicycle Trail. The landscaped grounds will be open to the public, serving as a de facto park and open space.

Improved neighborhood aesthetics

The project site was previously used by a waste hauling company and was an eyesore in the community. The project has revamped the area with structures and grounds designed to be innovative, modern, and aesthetically pleasing, thus improving the appeal of the San Gabriel River Parkway. A residential area is directly adjacent to the AWTF. Improved aesthetics along the parkway and public open space amenities could result in increased property values.

Improved resilience to major disruptions

WRD's goal is to replace imported water with locally available water for the purposes of groundwater replenishment. Imported water is highly susceptible to disruption from earthquakes, droughts and other catastrophes. Diversification of the water supply portfolio increases reliability, sustainability, resilience to drought impacts and operational flexibility.

Protect Los Angeles Region Economy

Water is critical to the Los Angeles County economy. With nearly $700 billion in annual output, Los Angeles County ranks among the world's largest economies. Its GDP is larger than Sweden, Norway, Poland or Belgium. The County's population of over 10 million would make it the 9th largest state in the United States. There are over 4 million residents, and 43 cities in WRD's service area.

If a major disruption to the imported water supply were to occur – either due to earthquake or other natural or manmade disasters, Los Angeles County could suffer devastating impacts to its economy and quality of life. By developing local water supplies and maximizing groundwater storage, the GRIP Recycled Water Project helps to protect the economic vitality of the region.

Evaluation Criterion 4—Reclamation's Obligations and Benefits to Rural or Economically Disadvantaged Communities

Subcriterion No. 4a—Legal and Contractual Water Supply Obligations

Explain how the Project relates to the mission of the Bureau of Reclamation and/or serves a Federal interest. Does the Project help fulfill any of Reclamation's legal or contractual obligations such as providing water for Indian Tribes, water right settlements, river restoration, minimum flows, legal court orders, or other obligations? If so, explain. Note: a Project may help Reclamation fulfill its obligations even if the project sponsor is not a Reclamation contractor, and indirect benefits to Reclamation will also be considered under this criterion.

The GRIP Recycled Water Project is consistent with the Bureau's policy to promote water reclamation and reuse to improve water supply reliability, improve efficiency, improve flexibility during water shortages, and diversify water supply. By reducing demand for imported water, the project also supports the Bureau's legal and contractual obligations related to the Endangered Species Act and addresses the dual priorities of water supply reliability and ecosystem restoration in the Bay-Delta and the lower Colorado River.

The project reduces reliance on water imports from the Colorado River by creating a new local supply. This promotes the Bureau of Reclamation's mission to address water management issues in the Colorado River Basin and supports the Bureau's "Lower Colorado River Operations Program" agreement. The project also supports the Bureau's drought contingency plans for the Upper and Lower Colorado River Basins. Reducing demand for imported water will allow for more storage capacity in the Upper Basin, as mandated in the Bureau's Demand Management Storage Agreement.

The GRIP Recycled Water Project addresses findings of the Bureau of Reclamation's 2016 *Sacramento and San Joaquin Basins Study* by developing a local, drought-proof, reliable recycled water source for groundwater replenishment. In doing this, GRIP makes it easier for the Bureau to meet other contractual arrangements and continue efforts to find a long-term comprehensive solution(s) to achieve reliable water supply for California and a healthy Delta ecosystem.

The President's memorandum, "Tribal Consultation and Strengthening Nation-to Nation Relationships," asserts the importance of honoring the Federal government's commitments to Tribal Nations. If the project will provide water for a Tribe, identify whether the project will increase water supply sustainability for an Indian Tribe, directly support tribal resilience to climate change or drought impacts, or provide other tribal benefits such as improved public health and safety through water quality improvements or economic growth opportunities.

The GRIP Recycled Water Project does not have a direct impact on an Indian Tribe.

Subcriterion No. 4b—Benefits to Rural or Economically Disadvantaged Communities

1. *Does the Project serve a rural community, or are there any rural communities within the Project sponsor's service area? If so, provide supporting information. (A rural community is defined as a community with fewer than 50,000 people. This may include rural areas that are part of a larger urban area.)*

No. The GRIP project does not serve a rural community and there are no rural communities within WRD's service area.

2. *E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities.*
   Does the Project serve an economically disadvantaged community, or are there any economically disadvantage communities within the Project sponsor's service area? If so, provide supporting information. This may include neighborhoods or census tracts within a larger service area that are economically disadvantaged. A community may be considered disadvantaged based on a combination of variables that may include:
   - *Low income, high and/or persistent poverty*
   - *High unemployment and underemployment*
   - *Racial and ethnic residential segregation, particularly where the segregation stems from discrimination by government entities*
   - *Linguistic isolation*
   - *High housing cost burden and substandard housing*
   - *Distressed neighborhoods*
   - *High transportation cost burden and/or low transportation access*
   - *Disproportionate environmental stressor burden and high cumulative impacts*
   - *Limited water and sanitation access and affordability*
   - *Disproportionate impacts from climate change*
   - *High energy cost burden and low energy access*
   - *Jobs lost through energy transition*
   - *Access to healthcare*

Yes. More than 50% of the population of the Central Basin meets the State of California's criteria for economically disadvantaged, which is a household income less than 80% of the statewide median, or $80,440, in 2019. Water produced at GRIP and used to recharge the groundwater basin will benefit everyone in the Basin. Data is available upon request.

Almost 40% of the cities in WRD's service area are considered economically disadvantaged using the latest American Community Survey economic estimates (household income less than 80% of the statewide median of $80,440 in 2019). WRD's service area is comprised of the Central Basin and the West Coast Basin which are hydrologically connected. Over four million people live in these two groundwater basins (10 percent of the State's population) residing in 43 cities. Economically disadvantaged communities in WRD's service area include the cities of Bell, Bellflower, Bell Gardens, Commerce, Compton, Cudahy, Gardena, Hawaiian Gardens, Hawthorne, Huntington Park, Inglewood, Lawndale, Lynwood, Maywood, Montebello,

Paramount, South Gate, and others, including unincorporated Los Angeles County. Data is available upon request.

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Evaluation Criterion 5—Watershed Perspective

A watershed perspective generally means an approach to planning directed at meeting the needs of geographically dispersed localities across a region or a watershed that will take advantage of economies of scale and foster opportunities for partnerships. This approach also takes into account the interconnectedness of water and land resources, encourages the active participation of all interested groups, and uses the full spectrum of technical disciplines in activities and decision making.

1. *Does the Project implement a regional or state water plan or an integrated resource management plan? Explain.*

   Yes. The project implements these regional, state and integrated plans:
   - Metropolitan Water District Integrated Resources Plan
   - Greater Los Angeles Integrated Regional Water Management Plan
   - Regional Groundwater Basins Master Plan
   - California Water Action Plan
   - California Recycled Water Policy
   - California WaterFix
   - City of Los Angeles One Water Plan
   - City of Los Angeles Green New Deal
   - Los Angeles County One Water Plan

   Metropolitan Water District Integrated Resources Plan (IRP) (2016)
   The Metropolitan Water District of Southern California imports water from both the Colorado River and Northern California and owns and operates an extensive range of capital facilities including the Colorado River Aqueduct while investing in a variety of local storage, supply, and conservation initiatives. MWD is a signatory of the Bureau of Reclamation Drought Contingency Plan for the Lower and Upper Colorado River Basins. The IRP emphasizes that investments needed to maintain the reliability of imported supplies are complemented by expanding **development of local supplies** and demand reduction. The IRP identifies that 200,000 acre-feet of additional water conservation and local supplies are needed to address risks and uncertainty in supply in Southern California. GRIP supports this regional planning effort by (1) providing a new sustainable, local water supply for groundwater replenishment, and by (2) eliminating the need to purchase imported water from MWD for this purpose.

   Greater Los Angeles Integrated Regional Water Management (IRWM) Plan (last updated in 2020)
   GRIP supports the goals of the Greater Los Angeles IRWM Plan and is identified as a regional project within the plan. IRWM is a collaborative effort to identify and implement water management solutions on a regional scale that increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives. GRIP is a collaborative, cost-efficient, and multi-benefit water management solution to address water supply issues and create a resilient water source for the southern Los Angeles County region, home to over ten percent of California's population.

Regional Groundwater Basins Master Plan (2017)

GRIP directly advances goals and strategies outlined in the Groundwater Basins Master Plan (GBMP). The GBMP identifies and evaluates specific projects and strategies to increase replenishment and the beneficial use of recycled water and captured stormwater. GRIP will do both of these things. Additionally, GRIP supports the plan's overall goals to develop projects and programs that enhance basin replenishment, increase the reliability of groundwater resources, improve and protect groundwater quality, and ensure that groundwater supplies are suitable for beneficial uses.

California Water Action Plan (last updated in 2016)

In providing a reliable local water supply that recharges groundwater and reduces water transfers from the sensitive Delta ecosystem, the GRIP Project is extremely well aligned with the goals of the California Water Action Plan (CWAP). This document, put out by the California Natural Resources Agency, is widely viewed as the roadmap for California's path to sustainable water management. It recognizes that due to declining environmental conditions and more variable hydrology expected under climate change, Californians face reductions in water supplies from major watersheds like the Colorado River watershed and the Sacramento-San Joaquin Delta. In the case of the Delta, declining native fish species and vulnerability to supply disruptions from earthquakes and flooding are concerns that loom large. CWAP lays out three broad objectives: (1) more reliable water supplies, (2) the restoration of important species and habitat, and (3) a more resilient, sustainably managed water resources system. In replacing water drawn from the Delta via the State Water Project with local recycled water, GRIP contributes to all three objectives.

California Water Plan (amended 2018)

WRD meets the objectives of the California Water Plan by providing safe, clean water for millions of Californians. Many regions of California experienced groundwater overdraft and unreliable water supplies. Now, climate change is exacerbating the causal issues. The plan recommends bold action to "strengthen operational flexibility of existing and future infrastructure," empower California's under-represented or vulnerable communities, improve inter-agency alignment, address persistent regulatory challenges and improve integrated watershed management, support the role of working landscapes, promote flood control, and expand managed aquifer recharge.

WRD is taking steps to provide reliable water supply and prevent groundwater overdraft. As the regional groundwater agency responsible for the replenishment of the Central and West Coast Basins, WRD is investing in operational flexibility by investing in reliable technology and preparing for the future. WRD's award-winning outreach program empowers under-represented communities by involving them in the project from the very beginning. By working efficiently with regulatory agencies to meet permit requirements, inter-agency alignment is improved.

California Recycled Water Policy (2013)

GRIP implements the Recycled Water Policy created by the State Water Resources Control Board to encourage local and regional water agencies to strive for reliable, local, drought-proof water through an emphasis on water recycling, water conservation, and maintenance of supply infrastructure. The State Water Board Resolution 2013-0003 adopted the following four goals for California in the Recycled Water Policy:

1. Increase the use of recycled water over 2002 levels by at least one million AFY by 2020 and by at least two million AFY by 2030.
2. Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.
3. Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.
4. Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

GRIP meets goals 1 and 4 by creating 21,000 AFY of local, drought-proof, reliable recycled water for groundwater replenishment. The Recycled Water Policy also states, "We declare our independence from relying on the vagaries of annual precipitation and move toward sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater."

In 2018, the SWRCB drafted an amendment to the California Recycled Water Policy and adopted new goals and objectives to increase recycled water use by 1.5 million AFY by 2020 and 2.5 AFY by 2030. By contributing over 21,000 AFY of new recycled water, WRD is maximizing the use of recycled water in areas where groundwater supplies have suffered overdraft.

One Water Los Angeles

The City of Los Angeles' One Water Plan identifies multi-departmental and multi-agency integration opportunities to manage water in a more efficient, cost effective, and sustainable manner. The City of LA wants to maximize water recycling through regional collaboration and partnerships with agencies such as WRD. WRD is not only providing recycled water for the City of Los Angeles, but for the rest of the region as well. WRD's local recycled water initiatives and partnerships meet the city's goals for water resilience and sustainability.

City of Los Angeles Green New Deal

Mayor Eric Garcetti has committed to recycling 100% of the city's wastewater by 2035 and has agreed to source 70% of water locally. Since the 1960's, WRD has pioneered the use of recycled water in Los Angeles.

Los Angeles County One Water Plan

Los Angeles County has a population of 10.2 million people, over 25% of the state's population. The County continues to import water from Northern California and the Colorado River. The County of Los Angeles has called for the development of local water supplies, which are especially important to this region. A majority of residents are dependent on

imported water supplies, which are unreliable and costly. Large scale recycled water projects like GRIP, promote resilience in urban regions by keeping the cost of water low for ratepayers and eliminating dependence on imported water.

2. *Does the Project help meet the water supply needs of a large geographic area, region, or watershed? Explain.*

   Yes. WRD is the largest groundwater management agency in the State of California, with a 420-square mile service area that encompasses 43 cities and four million residents in southern Los Angeles County. Approximately 10% of the population of the entire state of California lives in the WRD service area. Groundwater provides 40% of the water supply within the service area. WRD manages the Central Basin and West Coast Basin (which include approximately 50% of the geographic area and 53% of the population of Los Angeles County, the most populated county in the United States and one of the world's largest economies).

3. *Does the Project promote collaborative partnerships to address water-related issues? Explain.*

   Yes. GRIP is WRD's most ambitious project yet. This effort was possible because of collaborative and integrated partnerships, first and foremost with the LACSD. LACSD is a strategic partner, as it provides the source water for GRIP. In addition, MWD is supportive of the project and provides incentives for treatment of recycled water, which replaces existing demand on MWD's imported water supplies through direct replacement of potable water for regional groundwater production.

   The City of Pico Rivera and its residents have been extremely supportive of GRIP and were a key partner in the development of this project. Community residents have had direct involvement in development of design features for GRIP. In June 2015, WRD held a Community Design Charrette Workshop for Pico Rivera residents to share their ideas for the new facility. The significant public access, Learning Center, demonstration gardens and several other features can be attributed to local community input. WRD continuously provided construction updates to local residents and involved them every step of the way.

   Six letters of support from diverse stakeholders in the region attest to the collaborative nature of this project.

4. *Does the project include public outreach and opportunities for the public to learn about the project? Explain.*

   Yes. The environmental learning center has 38 interpretive exhibits to educate the public about water resources and the GRIP project. In addition, the learning center has demonstration gardens and educational water features that simulate the natural spreading technology used by the project. The AWTF includes an observation deck to accommodate tours for the public to learn about water treatment processes.

   The majority of the exhibits utilize video and projection technologies to allow for multi-lingual content and facilitate easy upgrades and changes to content. For example, the Regional Water Use exhibit uses a projected video to illustrate the volumes of water used by residents, industry,

and irrigation. Visitors will come away with a new appreciation for where their water comes from, the importance of recycled water and stormwater capture to Southern California's water supply, water conservation, groundwater management, climate change impacts on water resources, careers in water management and more.

WRD has implemented an award-winning outreach, education, and communication program for this project. The program included community outreach during the design process and ongoing communications via newsletters, door hangers, project tours, and quarterly community update events with residents, businesses, and elected officials. Furthermore, expanded community outreach through special events such as the annual Groundwater Festival, and state-of-the-art visualization tools.

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2. Project Budget

2.1. Funding Plan and Letters of Commitment

Funding Plan

The funding plan should include all planning, design, and construction costs for the Project components and activities that will be completed under an award under this FOA.

WRD negotiated a fixed-price design-build contract for GRIP. The funding plan included engineering and construction costs for the allowable period of July 12, 2017 through September 30, 2021. Design and planning costs incurred prior to the allowable period are outside the scope of this funding plan.

Description of Cost-Share

How the applicants will make their contribution to the cost-share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

WRD's contribution to the cost-share is monetary. WRD has financed the project with a Clean Water State Revolving Fund loan from the State Water Resources Control Board's Water Recycling Funding program [redacted] and Certificates of Participation issued in 2018.

Project Expenditures

Describe any Project expenditures that have been incurred or may be incurred before the anticipated award date that you seek to include as Project costs. For each cost, identify: The Project expenditure and the amount; Whether the expenditure is or will be in the form of in-kind services or donations; The date of cost incurrence; How the expenditure benefits the Project.

The only allowable expenditures for engineering and construction, which began on July 12, 2017, are included as Project costs. GRIP construction costs for the allowable period of July 12, 2017 through September 30, 2021 are detailed in Appendix B. All Project expenditures are clearly identified in the fixed-price design-build contract for GRIP construction, or they are part of the Owners Engineer/ Owners Agent contract for engineering services. The expenditures that occur between July 12, 2017 and the award date benefit the project because they are 100% related to construction and program oversight.

Funding Partners

Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

WRD received a grant from the State Water Resources Control Board's Water Recycling Funding program [redacted] and a grant from the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy [redacted] Additionally, WRD received a federal grant from the Bureau of Reclamation's Title XVI program. Table 2-1 summarizes the identity and amount of funding to be provided by these funding partners. Executed grant and loan agreements are available upon request.

Describe any funding requested or received from other Federal partners. Note: Other sources of Federal funding may not be counted towards the cost share unless otherwise allowed by statute.

No funding has been requested or received from other Federal partners.

Describe any pending funding requests that have not yet been approved, and explain how the Project will be affected if such funding is denied.

No other funding requests are pending.

Summary of Funding Sources

Table 2-1 Summary of Funding Sources

FUNDING SOURCES	AMOUNT
Non-Federal Entities	
1. California State Water Resources Control Board Division of Financial Assistance Water Recycling Funding Program: *Grant from The Water Quality, Supply, and Infrastructure Improvement Act of 2014; (2014 Bond Law, Proposition 1)* [redacted]	$15,000,000
2. San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy: *Grant from The Water Quality, Supply, and Infrastructure Improvement Act of 2014; (2014 Bond Law, Proposition 1)* [redacted]	$1,000,000
3. Water Replenishment District of Southern California (applicant)	$90,909,550
Non-Federal Subtotal	**$106,909,550**
Other Federal Entities	
1. Bureau of Reclamation *Grant from WaterSMART: Title XVI Water Recycling Projects under the WIIN Act* [redacted]	$4,272,000 $19,500 (admin)
2. Bureau of Reclamation *Grant from WaterSMART: Title XVI Water Recycling Projects under the WIIN Act* [redacted]	$4,184,193
2. Bureau of Reclamation *Grant from WaterSMART: Title XVI Water Recycling Projects under the WIIN Act* [redacted]	$6,000,000
Other Federal Subtotal	**$ 14,475,693**
REQUESTED RECLAMATION FUNDING	**$10,976,808**

Non-Federal Cost Share

Describe how the non-Federal share of Project costs will be provided.

Table 2-2 Summary of Non-Federal Cost Share

NON-FEDERAL COST SHARE	AMOUNT
1. California State Water Board (Prop 1 Water Recycling Grant)	$15,000,000
2. San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy	$1,000,000
3. Water Replenishment District of Southern California (applicant)	$90,909,550
Non-Federal Subtotal	**$106,909,550**

1. California State Water Board - $15,000,000

The California State Water Board awarded the GRIP Project a $15,000,000 grant from the Proposition 1 Recycled Water Grant Program. Funding agreement [redacted] was signed on May 15, 2017. The grant supported planning, design and construction of GRIP.

2. San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy - $1,000,000

The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy awarded a $1,000,000 grant to the GRIP Project. Funding agreement [redacted] was signed on April 26, 2017. The grant supported stormwater features and habitat improvements.

3. Water Replenishment District of Southern California (applicant) - $90,909,550

The Water Replenishment District will contribute the balance of construction costs. Financing is secured with a Clean Water State Revolving Fund [redacted] and Certificates of Participation (2018).

Letters of Commitment

Table 2-3 lists grants received and executed/signed loan agreements. These can be provided upon request.

Table 2-3 Funding Agreements

Funding program	Funding source	Agreement number	Federal grant?
State Water Resources Control Board Division of Financial Assistance Water Recycling Funding Program	$80 million loan from the Clean Water State Revolving Fund and $15 million grant from The Water Quality, Supply, and Infrastructure Improvement Act of 2014; (2014 Bond Law, Proposition 1)	[redacted]	No No
San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy	$1 million grant from The Water Quality, Supply, and Infrastructure Improvement Act of 2014; (2014 Bond Law, Proposition 1)	[redacted]	No
WaterSMART	$4.29 million, $4.18 million, and $6.00 million grants from Title XVI Water Recycling Projects under the WIIN Act	[redacted]	Yes

2.2.Budget Proposal

The budget proposal should include detailed information on the categories listed below and must clearly identify all Project costs, including those that will be contributed as non-Federal cost share.

Table 2-4 Budget Proposal

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	$/Unit	Quantity		
Salaries and Wages				
none				-
Fringe Benefits				
none				-
Travel				
none				-
Equipment				
none				-
Supplies and Materials				
none				-
Contractual/Construction				
[redacted]				$ 117,810,005
[redacted]				$ 14,552,046
TOTAL DIRECT COSTS				**$ 132,362,051**
Indirect Costs				
none				
TOTAL ESTIMATED PROJECT COSTS				**$ 132,362,051**

Construction activities included in the [redacted] contract are provided in Appendix B.

All equipment purchases are included in the design-build contract.

2.3.Budget Narrative

Contractual

Identify all work that will be accomplished by sub-recipients, consultants, or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. Identify how the budgeted costs for sub-recipients, consultants, or contractors were determined to be fair and reasonable. Note: If a sub-recipient, consultant, or contractor is proposed and approved at the time of award, no other approvals will be required. Any changes or additions will require a request for approval.

Equipment for the AWTF was purchased under the construction contract with [redacted] A breakdown of tasks to be completed, as well as a detailed budget estimate, is provided in Appendix B.

[redacted] was responsible for all construction related tasks. [redacted] is responsible for start-up, commissioning, and operations of the facility. [redacted] was selected to provide professional services as the Owner's Engineer/Owner's Agent including design. A description of tasks and budget estimate is provided in Appendix B.

Contractor Approval Process

[redacted] was selected through a competitive process in 2015.

The process originated in July 2015, when WRD approved the release of the Request for Expressions of Interest to gauge industry interest from experienced design-build companies. Upon authorizing the use of design-build as the preferred project delivery method, WRD issued a Request for Qualifications (RFQ) to identify design-build contractors for the GRIP Project.

Upon evaluating qualifications and conducting interviews, WRD issued a Request for Proposals (RFP) and completed a subsequent evaluation process. The results of the evaluation process were presented to the Capital Improvement Projects (CIP) Committee on April 4, 2016. The CIP Committee presented its recommendation to select [redacted] to design-build, and transitionally operate the GRIP AWTF at the regularly scheduled Board of Director's meeting on April 7, 2016. Furthermore, the Board of Directors authorized staff to commence contract negotiations with [redacted] to finalize the GRIP AWTF scope, schedule, and fee, resulting in a final fixed-price cost proposal. This competitive process ensured that WRD received the best value, and that costs were fair and reasonable.

Owner's Engineer/Owner's Agent Approval Process

[redacted] was selected through a Qualifications-Based Selection (QBS) procurement process in 2015. The process originated in as established by the United States Congress as a part of the Brooks Act (Public Law 92-582; see also 40 USC §1101 et seq.) to select an OE/OA for the GRIP AWTF project. QBS is a competitive contract procurement process whereby consulting firms submit qualifications to the procuring entity (District) who evaluates and selects the most qualified firm, and then negotiates the project scope of work, schedule, budget, and consultant fee.

As required by law, under a QBS procurement, the cost of the work (price) is not considered when making the initial selection of the best or most appropriate provider of the professional services required. The fees for services are negotiated, following selection, and before contracting.

A crucial component to QBS is the methodology and documentation the WRD used to ensure competition without consideration of price. An essential element was the use of a selection panel to make the evaluations, fairly evaluate the qualifications and compare/contrast the ideas for project execution offered by competing the firms. Following the interviews, the selection panel met on Thursday, April 2, 2015 to rate and rank the two proposals received including consideration of the additional information received during the interviews. The selection panel unanimously determined and agreed [redacted] was the best or most appropriate (qualified) provider of the professional services required for the GRIP AWTF OE/OA scope of work.

Total Costs

Indicate total amount of Project costs, including the Federal and non-Federal cost share amounts.

The total project cost is $132 million. The Federal cost share is $25 million and the non-Federal cost share is $107 million.

Table 2-5 Project Costs

Total Costs	
Federal Cost Share	$25 million
Non-Federal Cost Share	$107 million
Total Project Cost	$132 million

In 2017, WRD applied for $20,000,000 in Title XVI funding, which corresponds to 25% of GRIP project costs. WRD was awarded $4,272,000 plus an additional $19,500 for administration costs, for a total of $4,291,500. In 2018 and 2019, WRD applied for the remaining amount and received $4,184,193 and $6,000,000, respectively. In total, WRD has received $14,475,693 in Title XVI funding for GRIP. WRD is now requesting funding for the remaining portion ($10,976,808) of eligible expenses.

2.4. Other Federal Funding

No other Federal funding other than Title XVI funding was received for the Project.

3. Environmental and Cultural Resources Compliance

Environmental and cultural resources impacts of construction and operation of the GRIP project were identified in an Environmental Impact Report (EIR; California State Clearinghouse No. 2013020142) prepared for compliance with the California Environmental Quality Act (CEQA). The EIR did not identify any potentially significant impacts after implementation of mitigation measures. The Bureau reviewed the EIR in the course of approving the *Title XVI Feasibility Summary: Groundwater Reliability Improvement Program Recycled Water Projec*t and produced a National Environmental Policy Act (NEPA) Finding of No Significant Impact (No. 15-SCAO-015-FONSI).

A table summarizing GRIP environmental impacts and mitigation measures is included in the Final EIR, which is available at http://www.wrd.org/sites/pr/files/GRIP_Final_EIR_Recirculated-060315-FOR_PRINT_0.pdf. Issue areas analyzed in detail included aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources; environmental justice; geology and soils; greenhouse gas emissions and energy; hazards and hazardous materials; hydrology, water quality, and groundwater; land use and planning; mineral resources; noise; population and housing/socioeconomics; public services and recreation; transportation and traffic; and utilities and service systems.

- *Will the proposed Project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)?*

  The GRIP project site is located within a relatively dense urban area of Los Angeles County. The existing buildings were demolished to facilitate construction of GRIP.

- *Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the Project area.*

  Demolition of existing buildings, construction of the AWTF, preparing the ground for construction of the brine line and relocating utilities within San Gabriel River Parkway are all earth-disturbing project activities. Earthwork requires site grading and drainage improvements, including preparing pads and constructing drainage swales and pipes to divert stormwater around construction areas. In total, the project disturbed approximately 5 acres of soil.

  WRD contracted with [redacted] to monitor the presence of nesting birds (none located on site), air quality and pollution controls, aesthetics, noise, vibration, traffic controls, SWPPP compliance, and all other required parameters in the Final EIR Mitigation and Monitoring Plan. Since 2016, [redacted] conducted site visits on a week basis and more when certain activities were planned. [redacted] also conducted weekly nesting surveys as part of the weekly spot check during nesting season on the project site and did not find any nesting occurring throughout the construction period. WRD fulfilled all mitigation requirements and had no reports or significant findings. WRD did not receive any noise complaints from residents. WRD went above and beyond to minimize these environmental impacts and construction impacts to nearby residents by strategically scheduling truck routes during work hours, directing traffic, and making significant traffic and offsite improvements.

- *Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.*

  The GRIP Project was subject to the National Pollutant Discharge Elimination System (NPDES) and associated stormwater pollution prevention plan (SWPPP) requirements. In addition, as part of standard construction practices, typical best management practices for erosion, sediment, tracking, materials handling, and waste management were implemented during construction to reduce potential stormwater runoff. Best management practices were implemented to reduce sources of potential contaminants, reduce the potential for hazardous materials spills, reduce fugitive dust, and prevent runoff and sediment from leaving the site. With the implementation of NPDES and SWPPP requirements and standard best management practices, construction impacts were considered "less than significant."

  The South Coast Air Basin is a designated non-attainment area for ozone, PM10 and PM2.5. The ElR concluded that the project violated an air quality standard or contribute substantially to an existing or projected air quality violation as a result of nitrogen oxide (NOx) (an ozone precursor) and localized PM2.5 emissions during construction activities. A cumulatively considerable contribution to the air quality was also identified. Mitigation measures were adopted to reduce impacts to less than significant. Air emissions were below the *de minimis* thresholds at 40 CFR 93.153 (b).

  Prior to being purchased by WRD, the project site was occupied by a waste hauling company. The deconstruction and recycling phase of the project included deconstruction of three industrial buildings, recycling of materials, and site preparation. During deconstruction, WRD exceeded all regulatory requirements to ensure environmental improvements were made to the site. Innovative and sustainable practices were used while complying with all LEED standards during demolition. To obtain maximum LEED points, a 75% recycled diversion rate is required. A 96% recycled diversion rate was accomplished by recycling concrete, asphalt, metal, brick, and wood to local LEED certified facilities for processing. WRD achieved the most favorable environmental outcome, ensuring that the project exceeded standards requirements for sustainability and recycling of building materials which saved over 7,000 tons of waste from being sent to the landfill. The project received the National Demolition Association's 2017 Excellence in Demolition Award.

- *Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the Project area? If so, would they be affected by any activities associated with the proposed Project?*

  No federal or state-listed plant species were observed during the field survey of the Project site, nor was potentially suitable habitat for listed plant species observed. A limited amount of riparian habitat potentially suitable for two special-status plant species, including white rabbit-tobacco (*Pseudognaphalium leucocephalum*) and Parish's gooseberry (*Ribes divaricatum* var. *parishii*) is present along the San Gabriel River, in the survey buffer. However, no direct or indirect impacts to special-status plant species occurred.

  There was no critical wildlife habitat within the Project area. However, an endangered songbird, the Least Bell's Vireo ("vireo") *(vireo bellii pusillus),* is known to occupy riparian habitat along the San Gabriel River that is adjacent to the advanced water treatment plant site.

If vireos were to be in nearby habitat during construction, individuals could be disturbed by construction noise and activity to an extent that impairs essential breeding, feeding, and sheltering behaviors. Avoidance and minimization measures were adopted to mitigate indirect construction impacts to a "less than significant" level. A USFWS consultation letter dated March 22, 2016 summarizes the analysis of effects on the Least Bell's Vireo. During construction, environmental monitors did not find any impacts to vireos.

GRIP results in reduced releases of imported water into the San Gabriel River system. While reduction of imported water is considered a project benefit, the current imported water releases may support riparian habitat in portions of the river channel utilized by vireo. As mitigation for this, WRD established a $756,000 endowment for restoration, management, and enhancement of Least Bell Vireo habitat.

- *Are there wetlands or other surface waters inside the Project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed Project may have.*

  There are no wetlands or surface waters inside the Project boundaries that could be considered "Waters of the United States."

- *When was the water delivery system constructed?*

  GRIP utilizes water from the San Jose Creek Water Reclamation Plant which was constructed in 1971 and expanded in 1982 and 1993, bringing total plant capacity to 100 million gallons per day. The San Jose Creek Water Reclamation Plant is owned and operated by the Sanitation Districts of Los Angeles County. The recycled water pipeline which delivers water to the GRIP facility and to the Spreading Grounds was constructed in 1971.

- *Will the proposed Project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.*

  No. The GRIP Recycled Water Project did not modify any irrigation systems.

- *Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.*

  No structures were eligible for listing on the National Register of Historic Places. WRD conducted a records search, archival research, cultural resources pedestrian surveys, Native American consultation, and consultation with a State Historic Preservation Officer Efforts to identify potential cultural resources. One resource was identified within the area of potential effects (4330 San Gabriel River Parkway) and found to be not eligible for listing on the National Register of Historic Places. Pedestrian surveys of the area have not identified additional properties.

- *Are there any known archeological sites in the proposed Project area?*

  No, almost the entire ground surface of the project area was covered with asphalt at the time of the cultural resources investigation, obscuring surface visibility and hindering the identification of archaeological sites. Despite the lack of identified archaeological resources, the area of potential effects has been acknowledged as archaeologically sensitive because of its location between the San Gabriel River and an unnamed tributary and the potential for buried archaeological deposits.

  Because of the limited ground surface visibility and the potential sensitivity of the area of potential effects, the Water Replenishment District of Southern California committed to training construction personnel to identify archaeological materials, and retained a professionally qualified archaeologist and Native American monitor to be on site during all ground-disturbing activities.

- *Will the proposed Project have a disproportionately high and adverse effect on low income or minority populations?*

  No, in fact the opposite is true. The project is located in an underserved residential area. Local community members were engaged in planning and design of the modern, attractive architecturally forward facility. WRD incorporated many of the suggested features into the design and concept of the facility. For example, residents wanted a park-like open space available to the public for meeting space and education. These communities are served by the open space, free exhibits, programming and community events that will be held at the Albert Robles Center for the Administration and Learning Center. The trees, greenery and rooftop garden provide public health and climate benefits. The modern facility and amenities may positively impact property values, as the site was previously occupied by a garbage hauling company.

  Through the environmental review process it was determined that the project will not result in environmental impacts that are disproportionately high or adverse on minority and low-income populations. Impacts are less than significant, and no mitigation measures were required.

- *Will the proposed Project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?*

  No. On WRD's behalf, the Bureau led consultation with nine tribes and Native American contacts identified by the Native American Heritage Commission. Native American tribal representatives expressed concerns about the sensitivity of the area, the need for cultural resources training for crews, and expressed their desire to have Native American cultural monitoring incorporated. These things were all addressed. No historic properties were identified within the area of potential effects.

- *Will the proposed Project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?*

  No. Introduction or spread of noxious weeds or non-native invasive species was not an expected impact of the project. The project site was largely paved prior to construction and did

not contain noxious weeds or non-native invasives likely to be spread by project activities. Mitigation measures were in place to protect adjacent sensitive habitats from disturbance that could invite colonization by new species.

The Recycled Water campus is landscaped with a variety of low- to moderate-water-use shade trees, shrubs and native and water-efficient plants reflecting the ecology of the San Gabriel River Corridor Upper Reach 5. The site includes a native riparian garden to capture and manage stormwater, a coastal inland native plant garden, and low-water-use demonstration gardens appropriate for Southern California. All plants conform to the Plant Palette (Reach 5) from the San Gabriel River Master Plan.

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4. Required Permits or Approvals

The GRIP Recycled Water Project received all necessary discretionary approvals and permits prior to construction:

- California Environmental Quality Act (CEQA) Environmental Assessment
- South Coast Air Quality Management District (SCAQMD) Dust Control & Process Permit
- State Water Resources Control Board (SWRCB) CA Water Code 1211 Petition
- U.S. Army Corps of Engineers Permit
- U.S. Fish & Wildlife Service (USFWS) Streambed Alteration Agreement
- Clean Water Act (CWA) Section 401 Water Quality Certification
- National Pollutant Discharge Elimination System (NPDES) Construction General Permit
- NPDES Industrial Permit
- Los Angeles County Flood Control District (LACFCD) Encroachment Permit
- Groundwater Dewatering Permit
- Building Permit
- LACSD Easements
- Site Demolition Permit

Additionally, the final EIR was certified in June 2015.

In September 2018, WRD received the Waste Discharge Requirements and Water Reclamation Requirements permit (Order No. R4-2018-0129) to operate the facility. WRD staff has obtained the permits associated with the waste discharge requirements and water reclamation requirements from Los Angeles Regional Water Quality Control Board for the recharge activities.

WRD also received the Los Angeles County Municipal Separate Storm Sewer System (MS4) Permit for hydro-modification control, which requires a project that disturbs an area greater than one acre to match post-project runoff rates with the pre-project conditions. The GRIP Recycled Water Project exceeds this requirement with state-of-the-art stormwater features.

A list of government agency approvals necessary for the construction and operation of the GRIP AWTF and supplemental recharge wells is provided in Table 4-1.

Table 4-1 Required Government Agency Approvals

National Pollutant Elimination System (NPDES) Construction General Permit Stormwater Pollution Prevention Plan (CGP SWPPP)
NPDES for potential discharge to San Gabriel River
NPDES Dewatering
South Coast Air Quality Management District (SCAQMD) Rule 403 Dust Control
SCAQMD Rule 1166 Volatile Organic Compound (VOC) Emissions
Pico Rivera Foundation Only Permit
Pico Rivera Building Permit
Pico Rivera Grading Permit
Pico Rivera Encroachment
Los Angeles County Fire Permit
Pico Rivera Conditional Use
State of California Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) Title 22 Engineering Report Approval and recommendations to Los Angeles Regional Water Quality Control Board (RWQCB)
Waste Discharge Requirements and Water Reclamation Requirements (WDRs/WRRs) – Discharge Permit
LACSD Industrial Waste Permit
United States Army Corps 408
Los Angeles County Flood Control District (LACFCD) Easement Permit
California Fish & Wildlife Incidental Take Permit
California Water Board Division of Water Rights, review and approval of LACSD water right change petition
Environmental Review- AWTF (Final EIR)
Environmental Review- supplemental recharge wells (Final Supplemental EIR)
Engineering Report for Compliance with California Code of Regulation Title 22
Report of Waste Discharge (ROWD) for WDR/WRR
Report of Waste Discharge (ROWD) for NPDES to discharge into San Gabriel River

5. Disclosures and Other Statements

5.1. Additional Bipartisan Infrastructure Law Requirements

The GRIP project complies with the Wage Rate Requirements (Davis-Bacon Act) and the Application of Buy America Preference.

5.2. Single Audit Reporting Statement

WRD was required to submit a Single Audit report for the most recently closed fiscal year (FY2020-21). The report is associated with the Employer Identification Number (EIN) [redacted] and can be found on the Federal Audit Clearinghouse website.

5.3. Disclosures

WRD does not have any disclosures to report at this time.

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6. Letters of Support

Contents

1. Representative Nanette Diaz Barragán
2. Representative Alan Lowenthal
3. Representative Grace F. Napolitano
4. Representative Lucille Roybal-Allard
5. Representative Linda Sánchez

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HEALTH
ENVIRONMENT AND CIMATE CHANGE
ENERGY

COMMITTEE ON HOMELAND SECURITY
SUBCOMMITTEES:
BORDER SECURITY, FACILITATION, AND OPERATIONS
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February 28, 2022

Camille Calimlim Touton
Commissioner
Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-001

RE: FY22 WaterSMART: Title XVI WIIN Water Reclamation and Reuse Projects

Dear Commissioner Touton:

I write to respectfully request your thorough consideration of the Water Replenishment District of Southern California's (WRD) proposal for a FY22 WaterSMART: Title XVI WIIN Water Reclamation and Reuse Projects grant to support the Groundwater Reliability Improvement Program – Recycled Water Project (GRIP).

As the largest groundwater agency in Southern California, WRD is tasked with managing and protecting the groundwater supply for over four million residents across a 420-square miles service area in Los Angeles County. Every municipality and unincorporated community across my Congressional District is served by WRD. As a past recipient of Title XVI funding, WRD has continuously demonstrated their commitment to move Southern California toward independence from imported water.

In 2019, WRD completed the milestone GRIP, a multi-benefit regional water infrastructure project that provides a local and sustainable water supply, improves resilience, and aides the region's climate resiliency. Further, by reducing water imports, the project mitigates drought impacts and reduces greenhouse gases that disproportionately impact disadvantaged communities. The funding requested will reimburse WRD for costs related to the engineering, construction, and commissioning of GRIP, which will allow WRD to maintain high quality groundwater at affordable rates and strengthen the region's environmental resiliency.

As the Representative of California's 44th Congressional District, I respectfully request your thorough consideration of the proposal submitted by WRD for a FY22 WaterSMART Title XVI grant.

Sincerely,

Nanette Diaz Barragán

Nanette Diaz Barragán
Member of Congress

ALAN LOWENTHAL
47TH DISTRICT, CALIFORNIA

COMMITTEE ON NATURAL RESOURCES
CHAIR, SUBCOMMITTEE ON ENERGY & MINERAL RESOURCES
SUBCOMMITTEE FOR INDIGENOUS PEOPLES OF THE UNITED STATES
SUBCOMMITTEE ON WATER, OCEANS, & WILDLIFE

COMMITTEE ON TRANSPORTATION & INFRASTRUCTURE
SUBCOMMITTEE ON HIGHWAYS & TRANSIT
SUBCOMMITTEE ON WATER & ENVIRONMENT
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March 1, 2022

Camille Calimlim Touton
Commissioner
US Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-001

Dear Commissioner Touton,

I am writing to express support for additional Title XVI funding for the Water Replenishment District of Southern California (WRD). WRD completed construction of the Groundwater Reliability Improvement Program – Recycled Water Project (GRIP) in 2019. The Project, which received Title XVI funding in previous rounds, is authorized for up to $30 million. I support additional funding in 2022 to help defray the overall project costs, specifically to reimburse costs related to engineering, construction and commissioning of the project. Thanks to the completion of GRIP, imported water for groundwater replenishment has been replaced with advanced treated water from the facility. This means WRD is independent of imported water from Northern California and the Colorado River for groundwater replenishment.

In representing California's 47th District, which encompasses portions of eastern Los Angeles County and western Orange County, I understand the vulnerability of the regional water supplies, and the importance of preparing for a more sustainable future. The water imported to the region from the Bay-Delta and Colorado River is susceptible to disruption by earthquakes, fires, competing demands and drought. Climate change will continue to impact reliability.

This project not only benefits my district, but the region as a whole by providing purified replenishment water for residents in Southern Los Angeles County. As a member of the Transportation and Infrastructure subcommittee on Water Resources and Environment, I understand that GRIP play an important role in water supply reliability to an area heavily dependent on imported water and unreliable infrastructure.

I urge you to give WRD's application your full consideration. If you have any questions, please contact Clayton Heard in my Long Beach district office at (562) 436-3828.

Sincerely,

Alan Lowenthal

Alan Lowenthal
Member of Congress

MEMBER:
COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON OVERSIGHT
SUBCOMMITTEE ON SELECT REVENUE MEASURES
SUBCOMMITTEE ON SOCIAL SECURITY

Linda T. Sánchez
38TH DISTRICT, CALIFORNIA

Congress of the United States
House of Representatives
Washington, DC 20515

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March 1, 2022

Camille Calimlim Touton
Commissioner
US Bureau of Reclamation
1849 C Street NW
Washington, DC 20240-001

Dear Commissioner Touton,

I am writing to express my support for the Water Replenishment District of Southern California's (WRD's) application for funding from the US Bureau of Reclamation's 2022 grant program WaterSMART: Title XVI WIIN Water Reclamation and Reuse Projects. If granted with this funding opportunity, WRD would seek to support engineering, construction, and commissioning during the Groundwater Reliability Improvement Project's (GRIP) development between July 12, 2017, and September 30, 2021. WRD successfully applied for grant funding under the two previous Title XVI funding opportunities in 2017 and 2018, and received a $4.37 million grant and $4.18 million grant, respectively. Along with a $4.1 million grant in the year 2020.

GRIP is one of the 49 projects in the nation which has been granted eligibility to apply for this grant. WRD and the GRIP project have shown its continuous efforts on achieving its goal of regional water independence from imported water. Annually, GRIP will purify approximately 10,000 acre-feet (3.25 billion gallons) of tertiary treated (recycled) water to near-distilled levels through an advanced water treatment facility. In addition, WRD continues to provide environmental education, green space, and learning opportunities for students and residents in my district.

I appreciate your full and fair consideration of this worthwhile request. I am sure WRD efforts will continue to ensure that the over four million residents in our region have suitable groundwater supplies. If you have any questions about my support for this application, please do not hesitate to contact me.

Sincerely,

Linda T. Sánchez
Member of Congress

7. Official Resolution

RESOLUTION NO. 22-1171

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIOFRNIA APPROVING THE APPLICATION FOR AND EXECUTION OF A COOPERATIVE AGREEMENT WITH THE UNITED STATES BUREAU OF RECLAMATION FOR THE FY2022 WATERSMART: TITLE XVI WIIN ACT WATER RECLAMATION AND REUSE PROJECTS GRANT PROGRAM FOR THE GROUNDWATER RELIABILITY IMPROVEMENT PROGRAM (GRIP) RECYCLED WATER PROJECT

WHEREAS, the Board of Directors of the Water Replenishment District of Southern California (the "Board"), over a decade ago, initiated the Water Independence Now (WIN) program to replace costly imported water with locally produced sources for groundwater replenishment and seawater intrusion barriers; and

WHEREAS, the Board continues to pursue projects through its WIN Program to develop local and sustainable sources of water for use in groundwater replenishment activities; and

WHEREAS, the Groundwater Reliability Improvement Program (GRIP) Recycled Water Project is the cornerstone of WIN and replaces up to 100 percent of the imported water purchased for replenishment in the Montebello Forebay with recycled water, thereby "drought proofing" the region; and

WHEREAS, the United States Bureau of Reclamation (Reclamation) has released a new funding opportunity for Title XVI water recycling projects under the Water Infrastructure Improvements for the National Act (P.L. 114-322) also known as the FY22 WaterSMART Title XVI Grant Program; and

WHEREAS, the FY22 WaterSMART Title XVI Grant Program is for sponsors of water recycling projects that have completed a Title XVI Feasibility Study that has been reviewed by Reclamation, met all the requirements of Reclamation Manual Release WTR 11-01, and have been transmitted to Congress by Reclamation; and

WHEREAS, the GRIP Recycled Water Project meets all of the criteria required to be eligible for the FY22 WaterSMART Title XVI Grant Program and the Board desires to submit an application for consideration.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Water Replenishment District of Southern California, as follows:

1. Approves the filing of an application for the Bureau of Reclamation's FY22 WaterSMART Title XVI Grant Program for the GRIP Recycled Water Project.

2. If selected as a grant recipient, staff will work with Reclamation to prepare the necessary materials needed to enter into a cooperative agreement and to meet the deadlines established for entering into a cooperative agreement.

3. The Water Replenishment District of Southern California will fund at least 75 percent of the project costs.

4. Appoints the General Manager as agent to conduct all negotiations, execute and submit all documents including, but not limited to, applications, agreements, payment requests and so on, for the United States Bureau of Reclamation's FY22 WaterSMART Title XVI Grant Program.

PASSED AND ADOPTED by the Board of Directors of the Water Replenishment District of Southern California this 3rd day of March 2022 by the following vote:

Ayes 5
Noes 0
Absent 0

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

President, Board of Directors

ATTEST:

Secretary, Board of Directors

3/3/2022
DATE

APPROVED AS TO FORM:

H. Francisco Leal
Attorneys for the Water Replenishment
District of Southern California